TM 21-300

DEPARTMENT OF THE ARMY TECHNICAL MANUAL

DRIVER SELECTION AND TRAINING

(WHEELED VEHICLES)

HEADQUARTERS, DEPARTMENT OF THE ARMY
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CHAPTER 1
GENERAL

1. Purpose and Scope

a. This manual is a guide for commanders and personnel directly responsible for driver training; and outlines a system for the selection, training, and qualification of wheeled vehicle operators.

b. The scope of this manual includes the steps necessary to initiate and conduct a program of driver training: The planning of the program, selection of a cadre, selection of driver candidates, and the sequence of instruction. Driver supervision is included to indicate the continuing responsibility for reexamination and retraining to correct deficiencies.

c. The material presented herein is applicable without modification to both nuclear and nonnuclear warfare.

2. Objectives of Driver Training

The proper selection, training, qualification, and supervision of drivers is essential to the mobility of military units in modern warfare. The carefully planned and well implemented driver training program insures the selection of personnel with physical and mental qualities that will enable them to become competent drivers, the thorough training of selected personnel in every phase of military driving, and the licensing of only those of proven qualifications. The cumulative effects of bad driving are the recognized source of a majority of vehicular breakdowns. Elimination of the source through an active and efficient program of training and supervision will materially reduce the burden of maintenance personnel, will reduce the logistical problem of resupply of parts and vehicles, and will insure compliance with the provisions of AR 750–5 regarding command responsibility.

3. The Driver Training Program

Command and staff duties, responsibilities, and procedures generally applicable to any military operation are equally applicable to driver training. These are clearly indicated in the Staff Officer's Field Manual (FM 101–5). To initiate and conduct an effective driver training program capable of achieving the stated objectives, certain definite and progressive steps should be followed. These steps are described and explained in their normal sequence in this manual. As a rule, driver training programs should be conducted at battalion level or higher (FM 21–5). In this way, the fullest use can be made of the best instructors available, the instruction can be better controlled and supervised, and the most efficient and economical use can be made of special equipment. The programs may be modified to meet the needs of individual companies or batteries. Commanders may require drivers to meet specific requirements in addition to the standard licensing requirement prescribed in AR 600–55.

CHAPTER 2
PREPARATION FOR CONDUCT OF DRIVER TRAINING

Section I. PLANNING AND ORGANIZATION

4. General

Good driver training results from careful planning and organization. Prior to the start of instruction, an estimate of the driver training situation must be made. Based upon this estimate, plans and schedules are developed; instructors and assistant instructors are selected and trained; and equipment and facilities are secured and placed in readiness.

5. Estimate of the Driver Training Situation

a. The commander concerned, or the officer to whom the responsibility for preparation of the program has been assigned, must prepare an estimate of the driver training situation based upon an analysis and evaluation of local training factors. The following questions may be used as a guide in preparing the estimate:

(1) How many qualified drivers must be produced by the program?

(2) What are the sources of driver candidates? Replacement personnel? Unit personnel not previously qualified? Drivers for whom retraining is necessary?

(2) What is the general capability and background of new drivers to be qualified?

(4) How much time is available?

(5) How many instructors and assistant instructors are available?

(6) What special training do the instructors and assistant instructors require?

(7) What facilities are available, including classrooms, visual aids, shops, vehicles, driving ranges, and terrain?

(8) What additional facilities are needed, and how can these be obtained?

(9) What is the time and labor requirement to place all equipment and facilities in readiness?

b. The decision of the commander and the detailed planning of

the officer directly responsible for the conduct of the driver training program are based upon this estimate of the situation.

6. Planning and Organizing the Program

a. The driver training program is developed from an analysis of the driver training situation. From this analysis the following elements will be determined to initiate and execute the program:

(1) Number of drivers to be trained.

(2) Program or schedule of instruction.

(3) Student organization.

(4) Number of instructors to be selected and trained, and schedule for their training.

(5) Assignment of duties and responsibilities to instructors.

(6) List of equipment and facilities to be obtained and procurement procedures.

b. Scheduling and administration of the training schedule is accomplished in accordance with FM 21–5 and adjusted to conform with local conditions. Scheduling should be coordinated with other scheduled training of all units participating in the program to eliminate possible conflicts and consequent reduction in effectiveness.

Section II. SELECTION AND TRAINING OF CADRE

7. General

The success of any training program depends largely upon the proper selection and training of instructors, assistant instructors, examiners, and counselors. This section contains information on the tests to be administered, the type of ratings to be applied, and the training required to obtain competent personnel for the program.

8. Procedures for Selection of Driver Training Personnel

A standard system of tests and measurements should be applied to the selection of driver training personnel to insure a consistent selection of those best qualified. The following procedures, in the order given, are recommended.

a. Interview. All prospective instructors and assistant instructors should be interviewed by a competent officer; if practicable, by the officer directly responsible for the conduct of the program. Personnel records of the candidates should be available to the interviewer prior to and during the interviews. The properly conducted interview will quickly determine the overall suitability

of the candidate and should give a basis for scoring the personality section of the evaluation chart.

b. Examination. The written examination must be carefully prepared to serve as a proper measurement of the candidate's technical knowledge. This test should be objective in nature with its questions weighted in respect to their relative importance to the instructor's mission (FM 21–6).

c. Classification and Evaluation. Results of the interview, the written examination, and examination of the candidate's personnel records are entered and scored on the Evaluation Chart for the Selection of Instructors (app. II). Candidates may then be classified as fully acceptable, conditionally acceptable, or not acceptable according to their qualifications and potential abilities as indicated by the evaluation charts.

d. Selection. The best qualified and most experienced individuals should be selected to fill the requirements of the program. Further training will be conducted as indicated to provide the equivalent of the 40-hour program of instruction for Driver Education Instructor Course published by the Commanding General, U. S. Continental Army Command (AR 600–55).

9. Selection of Examiners and Counselors

Transportation motor pools and motor transport units will normally provide testing personnel on a full-time or additional-duty basis to perform the functions of driver testing stations. Examiners will be required in both the category of personnel management specialist and that of motor transport specialist; the former for the conduct of selection batteries, and the latter for physical evaluation measures and driver performance tests. Examiners should have a thorough knowledge of test administration and driving techniques, and should be periodically checked to insure consistency in their test evaluations. Driver counselors assist in overcoming and correcting physical deficiencies and poor driving habits through counseling and remedial training. To perform this function adequately, driver counselors should be selected from among those best qualified as driver instructors and should, in addition, possess maturity, tact, and the ability to diagnose driver deficiencies and take effective corrective action.

Section III. SELECTION OF DRIVER TRAINING CANDIDATES

10. General

A system for selecting driver training candidates is necessary to eliminate personnel who lack the ability, aptitude, or proper attitude to become safe and proficient drivers. The selection procedure consists of: battery I tests (when administered), screening of the records of prospective drivers, interviews, battery II tests, physical evaluation, and application of data for the classification of prospective drivers.

11. Driver Selection, Battery I

Driver selection, battery I consists of a series of written tests (DA PRT's 2609, 2612, DA FORM 6120) administered to replacement stream personnel to determine driving aptitude and basic knowledge of motor vehicle operation. Battery I tests are administered only at reception stations. A passing standard score is 70. A candidate's score may be found on his DA Form 20 (Enlisted Qualification Record) and on DA Form 348 (Driver Qualification Record).

12. Interview

A carefully prepared and skillfully conducted interview will be of great value in the selection of driver candidates. During the interview it is possible to verify the driving information recorded on the candidate's DA Form 20 and, through questioning and observation, to determine other important factors not recorded on this form. Undesirable attitudes, such as fear of military driving, resentment toward training, lack of interest, overconfidence or underconfidence, excessive aggressiveness, or irresponsibility may justify rejection of the candidate. Information obtained during the interview is recorded on the candidate's DA Form 348 (Driver Qualification Record). The value of the interview as a measurement is directly proportionate to its preparation and conduct. The following suggestions may be used as a guide. Standardized procedures must be developed to insure consistent scoring.

a. Conditions for the Interview. The location for the personal interview should be conducive to informal, yet orderly, conversation, free from distractions, and kept in a neat and clean condition. The interviewer must be well prepared to direct the conversation to bring out the necessary information. DA Pam 611–1 contains valuable guidance for the interviewer.

b. Interview Questions. The following questions are suggested for use in conducting the interview:

(1) How old are you?
(2) How many years of schooling have you completed?
(3) Have you had previous driving experience?
(4) What types of vehicles have you driven?

(5) How many years of experience have you had driving a passenger car?
(6) About how many miles did you drive during the last 12 months?
(7) How many driving accidents have you had during the last 3 years?
(8) How many accidents have you had in which someone was injured?
(9) Explain who was at fault and how, in your opinion, the accident(s) could have been avoided?
(10) How do you account for your good (poor) driving record?
(11) What do you think is the major cause of accidents?
(12) What do you think should be done to reduce the number of motor vehicle accidents?
(13) Have you had any experience as an automobile mechanic or in related work?
(14) Do you think you would make a good military driver? Why?

13. Driver Selection, Battery II

Driver selection, battery II is a series of written and manual tests (DA PRT's 2610, 2617, and 2623) administered to driver training candidates to determine judgment, visual judgment, and two-hand coordination. Battery II tests must be administered to all driver candidates. A standard score of 70 or higher is considered passing. Higher passing scores may be prescribed by proper authority to meet special conditions (AR 600–55). Test scores will be entered in the appropriate personal files.

14. Physical Evaluation of Driver Candidates

Physical evaluation measures will be administered to all driver candidates meeting prior requirements. Physical evaluation consists of a series of psychophysical tests administered by means of a standard driver testing and training device to determine the candidate's physical abilities and to serve as a basis for counseling and guidance, as well as a basis for rejecting individuals so handicapped as to present a clear risk to safe driving. Equipment for the physical evaluation measures is a Transportation Corps item of supply. This equipment includes instructions and materials necessary to conduct the physical evaluation measures. DA PRT 2677 contains minimum standards for these tests.

15. Use of Information

The information obtained from the interview, battery I and II tests, and physical evaluation measures is carefully recorded on DA Form 348 (Driver Qualification Record). This information will provide a basis for classification as to potential driving ability. Three distinct categories of candidates may be apparent:

a. Those with considerable previous driving experience. This group may be the most readily trained in the shortest time; however, they may have formed bad driving habits that will prove difficult to overcome.

b. Those with limited driving experience. This group will require more time to train and may also have formed bad habits.

c. Those with no previous driving experience. This group often produces the best operators although sufficient training time will be required to compensate for their lack of experience.

16. Test Administration

a. Specific procedures for conducting all phases of testing are prescribed in DA PRT 2676 (Manual for Driver Selection, Batteries I and II) and DA PRT 2677 (Testing Procedures for Licensing Drivers of Army Motor Vehicles). General testing conditions, as outlined in TM 12–260, apply in the administration of motor vehicle driver selection tests.

b. All test materials are requisitioned through normal publications supply channels in accordance with SR 310–20–9 and AR 600–55.

17. Learner Permit

Personnel are issued learner permits upon successful completion of driver training prerequisites and selection as driver candidates. AR 600–55 and paragraph 61 of this manual contain information on the validity of learner permits.

CHAPTER 3

PRELIMINARY DRIVER TRAINING

Section I. GENERAL

18. Introduction

This chapter and the following chapters present material recmended for a course in driver training. Each chapter describes a definite phase of instruction; the chapters are arranged in order of logical training sequence. References covering the subjects in greater detail are cited for instructor background and preparation. It is recommended that subjects be presented in the sequence shown in this manual; however, local conditions may necessitate a rescheduling.

19. Role of Motor Vehicles in Modern Warfare

The introduction of long range, mass destruction weapons to the battlefield has emphasized the role of the military motor vehicle. The mobility required in the concept of dispersion, sudden concentration of striking power, and rapid exploitation is dependent upon the efficient organization and operation of motor transportation. Tactics—the employment of troops and equipment in combat operations—and logistics—the movement of personnel, equipment, and supplies in support of combat operations—require the continued support of skilled military drivers who are called upon to operate under all conditions of weather and terrain in unfamiliar areas while subject to all kinds of enemy interference. The success of modern military operations will often be dependent on split-second timing. Every unit with its complete equipment must be in its designated position at the proper time and resupplied on schedule. The military driver must know and appreciate his responsibilities and must be trained to recognize the fact that military driving has little in common with civilian passenger car operation. Mastery of the skills of military driving to include vehicle maintenance as well as operation will insure continued mobility and contribute to success in combat.

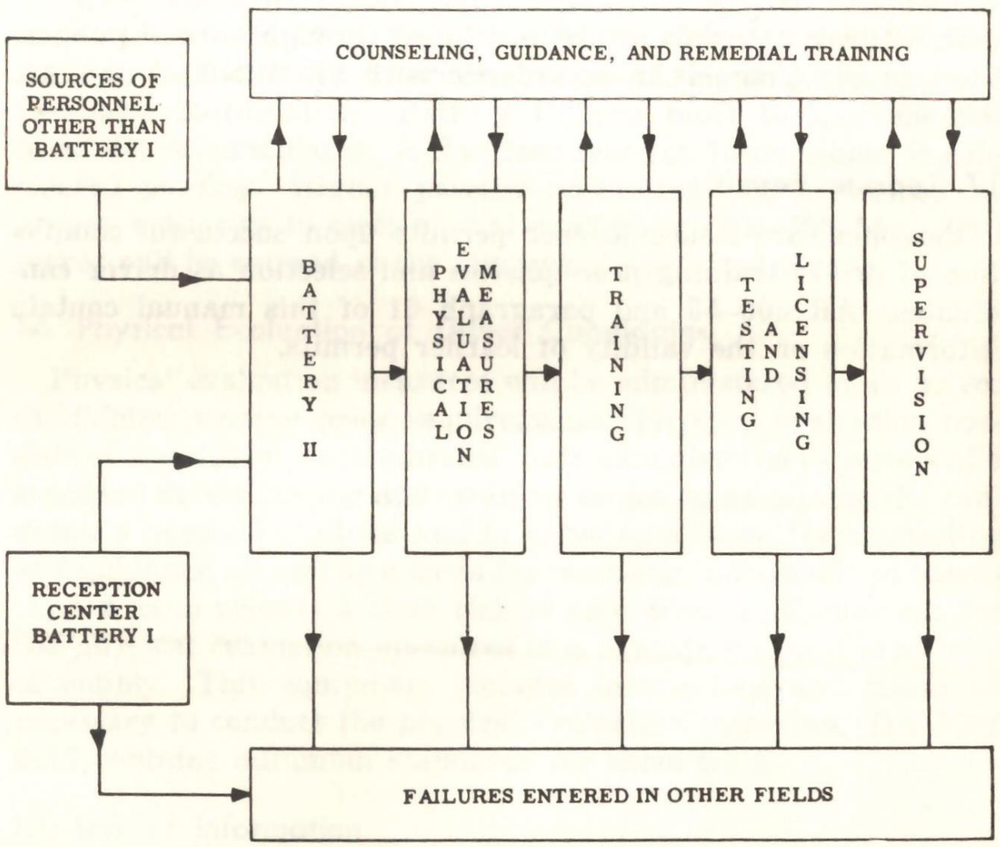


Figure 1. Phases of driver selection and training program.

Section II. PRINCIPLES OF AUTOMOTIVE VEHICLES

20. General

The military driver, although he is not expected to be a trained mechanic, should be familiar with the mechanical operation of his vehicle; the function and operation of its major assemblies; the requirements for driver maintenance; and the cause, early diagnosis, and prevention of common vehicle failures. Initially, the military driver should learn the general operational principles of the engine and its components, electrical systems and related units, the power train, and chassis components. He should also have a basic knowledge of the various types of military vehicles to include major differences in design and construction from commercial vehicles, and their inherent capabilities and limitations. It is important that this phase of driver training is not neglected and that the military driver is encouraged to increase his knowledge by continued study of appropriate technical manuals. The following paragraphs are provided as a guide for the instructor for the driver's preliminary mechanical training. TM 9–8000 provides the necessary technical information for the instructor. Current Army training films and GTA's should be used to clarify teaching points.

21. Types and Characteristics of Military Vehicles

a. Military motor vehicles are separated as to type in six

classes: general-purpose vehicles, special-equipment vehicles, special-purpose vehicles, combat vehicles, trailers, and semitrailers. This classification is based on the purpose for which the vehicle is designed and is, therefore, largely self-explanatory (FM 25–10, TM 9–2800–1, and TM 9–8000).

b. Military motor vehicles differ from civilian, or commercial, vehicles in design and construction to the degree that their proposed use requires alteration or modification. These differences are kept to the minimum to exploit existing automotive manufacturing facilities to the utmost. Military cargo vehicles, for example, must have a greater off-road capability than their civilian counterparts. To provide this mobility, all-wheel drive has been added and the rated payload capacity has been reduced to minimize damage from off-road operation. Full-tracked combat vehicles have little in common with commercial-type vehicles due to the requirements of combat operation, and tend to diverge increasingly as their evolution continues (TM 9–2800–1).

22. Characteristics of Engines

Preliminary mechanical instruction should include a familiarization with the basic design, construction, and operation of automotive engines. This instruction may be as detailed as time and facilities will permit. The following is recommended as a minimum.

a. Basic Principles. Basic principles of engines may be explained and illustrated by the design, construction, and operation of the 4-stroke cycle, single cylinder, gasoline engine.

b. Multicylinder Engines. The adoption of multicylinder engines for automotive power has served to lessen the need for heavy flywheels to supply power for crankshaft travel and has made smoother operation possible by increasing the number of power impulses to each rotation of the crankshaft.

c. Modern automotive engines are classified as to cooling, valve arrangement, and cylinder arrangement. They may be either air or liquid cooled. The most common valve arrangements are L-head, I-head, and F-head. In each the shape of the combustion chamber resembles the letter identifying it. Cylinder arrangements are usually in-line or V-type for liquid cooled engines; and V-type, radial, or horizontally opposed for air cooled (TM 9–8000).

23. Electrical and Ignition Systems

Driver instruction should include electrical and ignition systems courses since a large proportion of common engine failures may be traced to this source. In addition to the description of the electrical and ignition systems outlined below, the instructor should point out the common causes of electrical and ignition failures.

a. Battery. Description and explanation of the functions, construction, and principles of operation of the storage battery. Driver maintenance should be stressed.

b. Generating System. An explanation of the function and operation of the generator, the need for regulation, and design and operation of the regulator.

c. Starting System. Description of the various types of starters to include design and operation. Detailed explanation of the type used in the driver's assigned vehicle.

d. Ignition. Explanation of the ignition system with a detailed description of its component parts and their specific functions. Basic ignition troubleshooting should be included.

e. Lighting System. Description of the elements of the lighting system with particular emphasis on those elements not commonly found on civilian vehicles including restrictions on their use.

24. Fuel System

Basic principles of the function and operation of the components of the fuel system should be included in instruction for military drivers. In addition to the basic principles of carburetion and the effects of changes in gasoline, the driver should be familiar with the function, design, and operation of each of the elements from fuel tank to exhaust. Particular emphasis should be placed on the driver's maintenance responsibilities and specific repair limitations in regard to the fuel pump, fuel filters, air cleaners, and the carburetor.

25. Power Transmission System

Since major failures of elements in the power train may be caused by operator abuse, it is essential that the military driver have some knowledge of its various components and their functions. In the course of this phase of instruction, driver responsibilities and the results of common driver abuses should be stressed. It is suggested that the transmission of power from the engine to the wheels be traced through the clutch, transmission, transfer assembly, universal joints, slip joints, propeller shaft, final drive, differential, and axles. Instruction should include the differences between manual and automatic transmissions, and essential characteristics of front-wheel drive.

26. Steering System

Instruction should include a complete description of steering linkage, lubrication points, and proper tightening and/or adjust-

ment. Common steering failures and their causes should be explained to insure early correction of deficiencies and consequent reduction in accidents. Although this instruction will be concerned primarily with the steering system on which instruction is being given, both manual and power steering may be described.

27. Vehicle Instruments and Controls

Timely warnings of engine trouble are indicated to the alert driver by the instruments and gages displayed on the instrument panel of his vehicle. The military driver should be familiar with each of these instruments, how it works, and what it signifies. It is recommended that the instructor explain each in turn, stressing the danger signals for the driver. The other controls commonly mounted on the instrument panel, such as throttle, choke, starter, heater, and windshield wiper, may be explained at this time.

Section III. DRIVER MAINTENANCE AND SERVICING

28. General

Basic mechanical familiarization covered in the preceding section demonstrates the fact that the modern military motor vehicle is a complex assembly of moving parts interdependent in their operation. The problem of motor maintenance becomes increasingly complicated as design and construction introduces further refinements. The Army system of maintenance recognizes the need for separation of maintenance responsibilities based upon the tools and mechanical skills required. Since the military driver is a vital part of this system, he must be thoroughly trained in his duties and responsibilities. He should also know the general structure of the supporting maintenance elements—and how these organizations operate in performing services beyond his capabilities (TM 9–2810).

29. The Army Maintenance System

The division of responsibilities in the Army System of Maintenance is based upon the primary mission of the command; the character and mobility of the command; and the distribution of tools and equipment, repair parts and assemblies, and skilled mechanics and supervisors. In line with this concept three categories of maintenance have been defined by the Department of Defense. These categories are organizational, field, and depot, which are further divided into five echelons to provide greater flexibility and accuracy in defining Army maintenance operations. Tables of

organization and tables of allowances reflect the assignment of responsibility for performing these echelons of maintenance to units or levels of command based on the time, facilities, and degree of mobility expected of the unit.

a. Organizational Maintenance. Organizational maintenance is the authorized maintenance responsibility of the using organization for performance on its own equipment. This maintenance is generally preventive in scope and consists of inspecting, cleaning, preserving, lubricating, and adjusting as required, and may also include replacement of minor parts. This category of maintenance includes the first and second echelons.

(1) *First echelon.* First echelon maintenance is the foundation of the Army maintenance system. It is performed by the driver and/or crew and consists of regular and habitual proper care, operation, cleaning, preserving, and lubrication of the vehicle. It also includes adjustment, minor repair, testing, and parts replacement specifically authorized or prescribed by pertinent technical publications.

(2) *Second echelon.* Second echelon maintenance is performed by specially trained and equipped personnel at company (battery) and battalion levels. Such maintenance sections or platoons perform services beyond the capabilities and facilities of the first echelon but within the limits prescribed by technical publications or dictated by authorized tools, parts, supplies, test equipment, and trained personnel.

b. Field Maintenance. Field maintenance is a technical service responsibility and includes the third and fourth echelons. Specially trained and equipped units perform designated maintenance service in direct support of using organizations. Third echelon maintenance organizations support lower echelons by providing maintenance assistance, mobile repair crews, and repair parts as required. Repair of components and assemblies is within their capabilities. The principal function of fourth echelon maintenance is to repair assemblies, components, and end items for return to using organizations. When necessary, fourth echelon maintenance may assist in the repair or modification of overflow work from third echelon maintenance.

c. Depot Maintenance. Depot maintenance is responsible for major overhaul or complete rebuild of parts, subassemblies, assemblies, and/or end items. To perform these services, depot maintenance is provided with extensive shop facilities and equip-

ment and with personnel of higher technical skill. Depot maintenance embraces fifth echelon, the highest echelon of maintenance.

30. Driver Maintenance Responsibilities

Current policy requires that each vehicle will have a permanently assigned driver and/or leader. This assignment gives personal responsibility to the driver for the proper performance of preventive maintenance services for a specific vehicle. The development of a feeling of personal responsibility is one of the most important elements of the entire maintenance system. It is a command responsibility to provide adequate preventive maintenance training to prepare the driver for this function.

31. Daily Preventive Maintenance Services

Each driver will inspect and service his assigned vehicle every day that it is operated. He will perform this service in three parts. Before-operation service consists of a thorough inspection of the vehicle to determine and correct any deficiencies not discovered or not present at the time of the last after-operation service. During-operation service is the continuous alertness of the driver for any unusual noises or odors, abnormal instrument readings, steering irregularities, or other evidence of vehicle malfunction while moving. After-operation service is the basic daily service for the vehicle since, at this time, it is prepared for its next operation. Upon termination of this service the vehicle should be prepared to roll at a moment's notice with all deficiencies corrected.

32. Other Preventive Maintenance Services

Other preventive maintenance services currently prescribed consist of the Quarterly PM Service and lubrication services. The Quarterly PM Service is performed by organizational maintenance personnel assisted by the operator at intervals of three calendar months or 3000 miles for wheeled vehicles. Specific and detailed procedures for the performance of this service are contained in the technical manual for the particular vehicle. Lubrication services not normally performed at the Quarterly PM Service will be performed on a mileage basis as required by pertinent Lubrication Orders.

33. Driver's Publications, Forms, and Reports

The military driver is directly concerned with publications, forms, and reports used in the daily operation and maintenance of his vehicle. Instruction will include familiarization with the following to insure proper maintenance and control of military vehicles:

a. Technical Manual. The technical manual pertaining to the vehicle is carried on the vehicle and contains detailed procedures for operation and maintenance as well as a complete description of the vehicle and its components.

b. U. S. Government Motor Vehicle Operator's Identification Card. This form (Standard Form 46), properly filled out and current, is the operator's permit to drive. This permit is valid only for vehicles on which the driver has qualified. It must be carried with him when operating a government vehicle.

c. Accident Identification Card, DD Form 518. This form is used for the identification of vehicle and driver at the time of an accident. It is carried in the vehicle at all times (two or more may be carried when the vehicle is being operated off post). The form is usually filled out in ink with the exception of driver identification which may be entered in pencil.

d. Operator's Report of Motor Vehicle Accident, Standard Form 91. This form is required to be carried in the vehicle at all times. It is filled out by the operator at the scene of the accident and delivered to his immediate superior as soon as possible thereafter. Each operator must be carefully instructed in filling out this form.

e. Lubrication Order. This publication, applicable to the specific vehicle, must be carried on the vehicle and must be thoroughly understood by the driver.

f. Vehicle and Equipment Operational Record, DD Form 110. Every operator of a wheeled motor vehicle is required to have a properly authenticated operational record as official authorization for operating a vehicle. This form, when completed, constitutes a record of destination, load, time of departure, and total mileage for a specific period of operation; and a report of first echelon maintenance activities.

Section IV. ELEMENTS OF SAFE DRIVING

34. General

The ability to mechanically operate a motor vehicle is not the only qualification of the safe driver. This skill must be augmented by a definite sense of personal responsibility and by a knowledge of, and unceasing respect for, the laws of physics, physiology, and psychology as they affect the driver and his vehicle. Since safety is a command responsibility, it is the duty of commanders

at all levels to insure compliance with these nonstatutory laws. Instruction for military drivers should include an explanation of these elements and examples of the results of common violations.

35. Physiological Considerations

To operate a vehicle with the maximum degree of safety, the driver must maintain top physical condition. Any deterioration in physical condition will reduce this degree of safety. Prospective drivers having physical defects that will interfere with safe vehicle operation should be eliminated from the driver training program upon detection of critical defects. Those with major physical deficiencies are normally screened before entering the program. However, instructors and supervisors should be constantly alert to evidence of incapacitating disease such as heart trouble, asthma, or epilepsy; of vision deficiencies not detected in physical examinations; and of dangerously slow reaction time. Although temporary, the effects of fatigue, drugs, and alcohol seriously impair the physical condition of the driver and may be regarded as a major cause of fatal accidents.

36. Psychological Considerations

To drive properly and safely, a driver must have a proper attitude toward driving and emotional control. Faulty attitudes toward driving may often be detected by instructors and supervisory personnel. These attitudes may be eliminated to some degree through instruction and counseling. If the driver does not respond to corrective measures and continues to show evidence of faulty attitudes, it is advisable to drop him from the program. Overconfidence, egotism, rationalization, and impatience are among the most common attitudes leading to unsafe driving practices. Overconfidence encourages the taking of unnecessary chances. Egotism disregards the rights of others. Rationalization prevents the driver from recognizing and correcting his own faults. Impatience leads to unsafe driving through refusal to adjust to driving conditions. Since emotions such as anger, fear, and grief affect the driver's ability to think clearly and react promptly, safe driving requires a high degree of emotional control. Emotional control may be developed in the driver through self-discipline. This, however, requires his full cooperation and the will to overcome emotional instability. Selection of drivers who show evidence of unregulated emotions should be avoided.

37. Effects of Physical Laws

The laws of nature are constant and automatic. It is impossible to drive properly and safely without recognizing such natural forces as gravity, friction, centrifugal force, and kinetic energy (fig. 2). Instruction for the military driver should include, but not be limited to the following:

a. Gravity. Gravity is the force that pulls a body toward the center of the earth. It is measured in terms of weight. Without the force of gravity, the wheeled vehicle would be weightless and impossible to control by conventional means—to start, stop, or steer it. The force of gravity increases downhill speeds and stopping distances; it exerts a rearward pull on upgrades requiring increased power; and still applies its power to the vehicle at rest, making it necessary to take precautions while parking. Absolutely level terrain is the exception rather than the rule; therefore, the driver must always recognize the existence of gravity and its power.

b. Friction. Friction is the resistance to motion caused by contact between two surfaces. It results from the interlocking of slight irregularities on surfaces in contact. When an attempt is made to slide one surface over another, the grip of the interlocked irregularities resists the motion. The greater the contact pressure and the coarser the surfaces, the greater the friction. More road friction is produced by a heavy vehicle than a light one because there is greater contact pressure; more driving control is possible on a dry road than on an icy one because the dry surface is rougher. Thus, although friction is responsible for many maintenance problems and necessitates the use of lubricants, without friction it would be impossible to get the vehicle in motion, control its direction, or stop it.

c. Centrifugal Force. Centrifugal force is that force which, acting upon an object traveling in a curve, tends to force it from the curved path into a straight one. The magnitude of centrifugal force depends upon the degree of the curve and the weight and speed of the object. In driving, road curvature and vehicle weight are fixed; the only variable is speed. The following example illustrates the effect of speed. An 11,000-pound vehicle, making a turn of 500 foot radius at 20 miles per hour has to overcome centrifugal force of only about 583 pounds. At 30 miles per hour, the force is increased to 1,312 pounds; and at 60 miles per hour, it is over 3,644 pounds—six times as great as at 20 miles per hour. The vehicle is prevented from skidding off the road only by the friction between the tires and the road. If the wheels hit a patch of ice or water, friction may be reduced to the point where it cannot hold the vehicle against centrifugal force. If the vehicle enters the curve at too great a speed, centrifugal force will overcome fric-

tion even if the road is dry and free of ice. Whenever centrifugal force is greater than friction, the vehicle will skid. Centrifugal force also tends to tip over large vehicles on curves. This tendency is caused by tire-road friction holding the tires to the road on the inside of the curve while centrifugal force pulls the upper part of the vehicle toward the outside of the curve.

d. Kinetic Energy. Kinetic energy is the energy of motion; it is the kind of energy that a body has because it is moving. Kinetic energy is often referred to as momentum. Weight and speed determine the kinetic energy of a vehicle. Its kinetic energy does not increase uniformly with speed but with the square of the speed, or in other words if the speed is doubled, the kinetic energy becomes four times as great. A vehicle cannot be stopped until all of its kinetic energy is dissipated. The only safe way this can be done is by the controlled use of friction (proper braking) and engine compression. The force of impact bears a direct relation with the speed of dissipation of kinetic energy. Gradual reduction of kinetic energy reduces the force of impact while rapid reduction, stopping suddenly, increases impact.

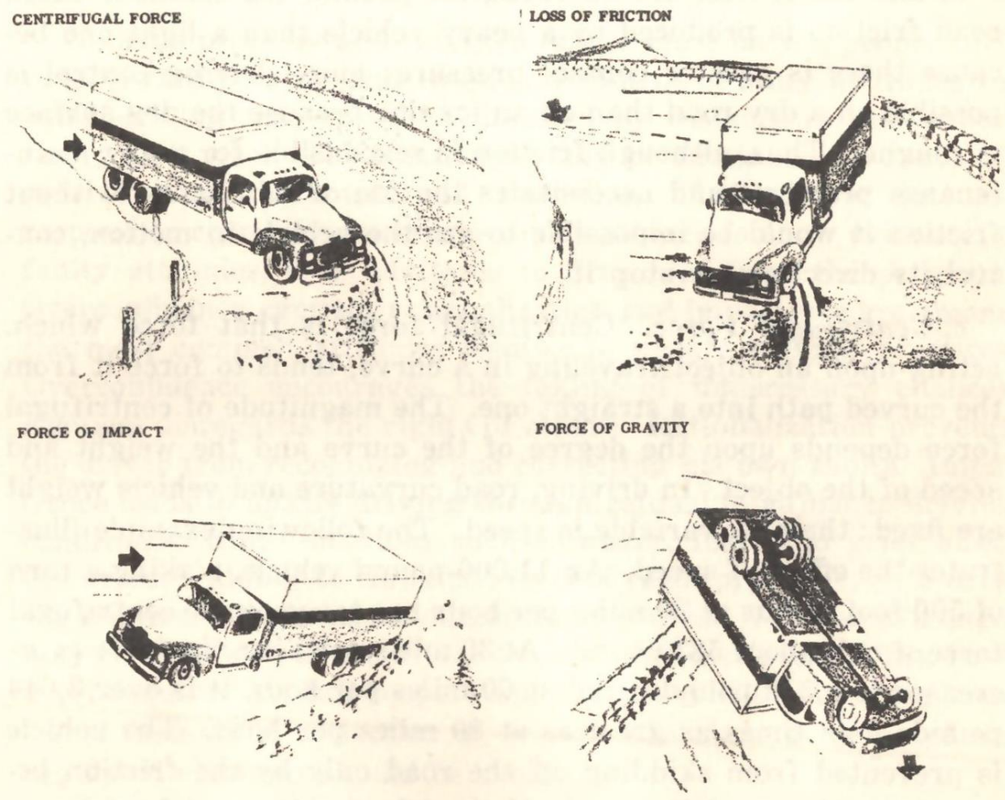


Figure 2. Nature's laws ignored.

Section V. TRAFFIC CONTROLS AND RULES OF THE ROAD

38. General

On highway mobility depends on the maintenance of efficient traffic circulation as well as usable automotive horsepower. The efficiency of traffic circulation, as shown by the elimination of accidents, interference, and congestion, depends upon the degree to which all personnel comply with traffic laws, regulations, and directions. Compliance with laws and regulations is gained to a large degree by driver selection and training and by proper orientation as to the reasons for the traffic regulations. This compliance is further enforced by military and civilian police through apprehension and punishment of violators by appropriate courts. Except when specifically directed otherwise, military drivers must comply with all civil traffic laws and ordinances. Civilian traffic police have full authority for regulating all traffic in towns and on public roads. Military police have full authority over all military vehicles wherever they may be.

39. Traffic Controls

In addition, civilian and military police traffic control normally utilizes a system of signs, signals, devices, and markings. Every driver should be familiar with, and know the meaning of all standard aids to traffic control.

a. Signs. The size, color, and shape of permanent traffic signs is generally standardized within the United States; international standardization was initiated in the United Nations in 1950 and is continually increasing. Standard shapes used for important traffic signs and to indicate the type of message carried are as follows: Stop signs are octagonal; other regulatory signs such as speed, one-way, and no parking are rectangular; warning signs are diamond-shaped; railroad signs are circular; and guide signs are square or rectangular, depending upon the length of the message. Each of these signs carries an important message for the driver; its shape enables him to identify the type of message at a distance.

b. Signals. The military driver must be familiar with three categories of signals commonly used to control traffic. First, he must know the meanings of and how to use properly those hand signals common to both military and civilian driving to warn others of his intentions. Second, he must know the hand signals used by police to control traffic. And third, he must know the signals used to control military vehicles in convoy.

c. Devices. The most common traffic control devices are the

traffic lights. These lights have standard meanings: Red means *stop;* yellow means *caution—prepare to stop;* green means *go ahead with care.* A flashing yellow means *proceed slowly with caution,* and a flashing red means *stop, look, and proceed with care.* In addition, public address systems may be used to supplement other means of controlling traffic at critical intersections.

d. Markings. Pavement markings are widely used to control the flow of traffic. These markings may be used to indicate the middle of the road; to indicate safe and unsafe passing zones through the use of double lines for *no passing,* or broken lines to indicate safe passing zones (the broken line usually being on the driver's side used in conjunction with a solid line); and used to indicate crosswalks, reduced speed zones, school zones, and approaches to railroad crossings.

40. Rules of the Road

General rules of the road to be observed by military drivers are outlined below. These rules are standardized throughout the United States to promote highway safety; but may be modified by local laws and ordinances, or by appropriate civil or military authority. Such modifications will be normally indicated by traffic control personnel, or by signs or markings. Drivers will be informed of applicable rules and variations when operating outside the continental United States.

a. Vehicles will be operated on the right of the highway giving approaching traffic at least one-half of the road unless conditions or directions indicate otherwise. When overtaking and passing other vehicles, the driver will pass to the left and remain on the left until safely clear of the overtaken vehicle. However, no vehicle will overtake and pass another unless the left side is clearly visible and free of oncoming traffic for a distance sufficient to pass and safely return to the right without coming within 100 feet of an approaching vehicle. Passing on the right is permitted when the overtaken vehicle is making or is about to make a left turn. Other authorized exceptions to the rule of driving on the right include multilane highways where lanes are clearly marked and directions posted, and one-way roadways where traffic may move in two or more columns. Under such conditions movement from one lane to another will be kept to the minimum and then only when such movement may be made with safety and without interference with the movement of traffic in other lanes.

b. No driver will start, stop, or turn a vehicle from its course on the highway without first ascertaining that such change may be made with reasonable safety and giving adequate warning of

his intentions. A visual survey of the traffic that may be affected by the movement of his vehicle will be made habitually by the driver. He must be trained to judge the speed of oncoming vehicles and the effect of his movement upon either their speed or direction. Warning signals given by the driver will be standard, appropriate to his intentions, clearly given, and timed to give reasonable warning. A proper signal of intention to turn right or left will be given continuously during not less than the last 100 feet traveled by the vehicle before turning. To turn right at an intersection, the driver will approach the turn at the extreme right of the traveled way and make the turn itself as close to the right as practicable; to turn left, the driver will approach the turn to the right of, and close to, the center line, leaving the intersection to the right of the center line of the entered road—except that a one-way road will be entered to the left of the center line. A turn to reverse the direction of a vehicle will not be made unless a vehicle approaching from either direction can see the movement from a distance of 500 feet.

c. The rules of right-of-way must be observed with judgment and courtesy. The safe driver gives the right-of-way rather than taking it. In general, when two vehicles enter an intersection at approximately the same time, the vehicle on the left yields the right-of-way to that on the right. Right-of-way is always yielded to the first vehicle arriving at an intersection. When entering a through highway from a secondary road, the right-of-way is given to traffic on the main thoroughfare. Fire, police, and emergency vehicles have the right-of-way over all other vehicles. Directions given by traffic control personnel or signs will be obeyed regardless of conflict with the general rules quoted.

d. Highway speeds to be observed under normal conditions vary somewhat from state to state. These speeds are generally posted on regulatory signs with warnings where reduction in speed is directed. Safe highway speeds are determined by analysis of traffic, highway design, and population densities. Posted speeds indicate the results of such analysis under conditions of average traffic, dry pavement, and good visibility. At no time should vehicles be operated in excess of posted limits; driver judgment should be consciously developed to determine speeds suitable to other conditions. It is to this end that military driver training stresses the elements outlined in the preceding section. Safe driving requires constant adjustment to changing driving conditions. The military driver will be trained to judge and maintain safe following distances to insure adequate reaction time and stopping distance at any speed and under varying road conditions.

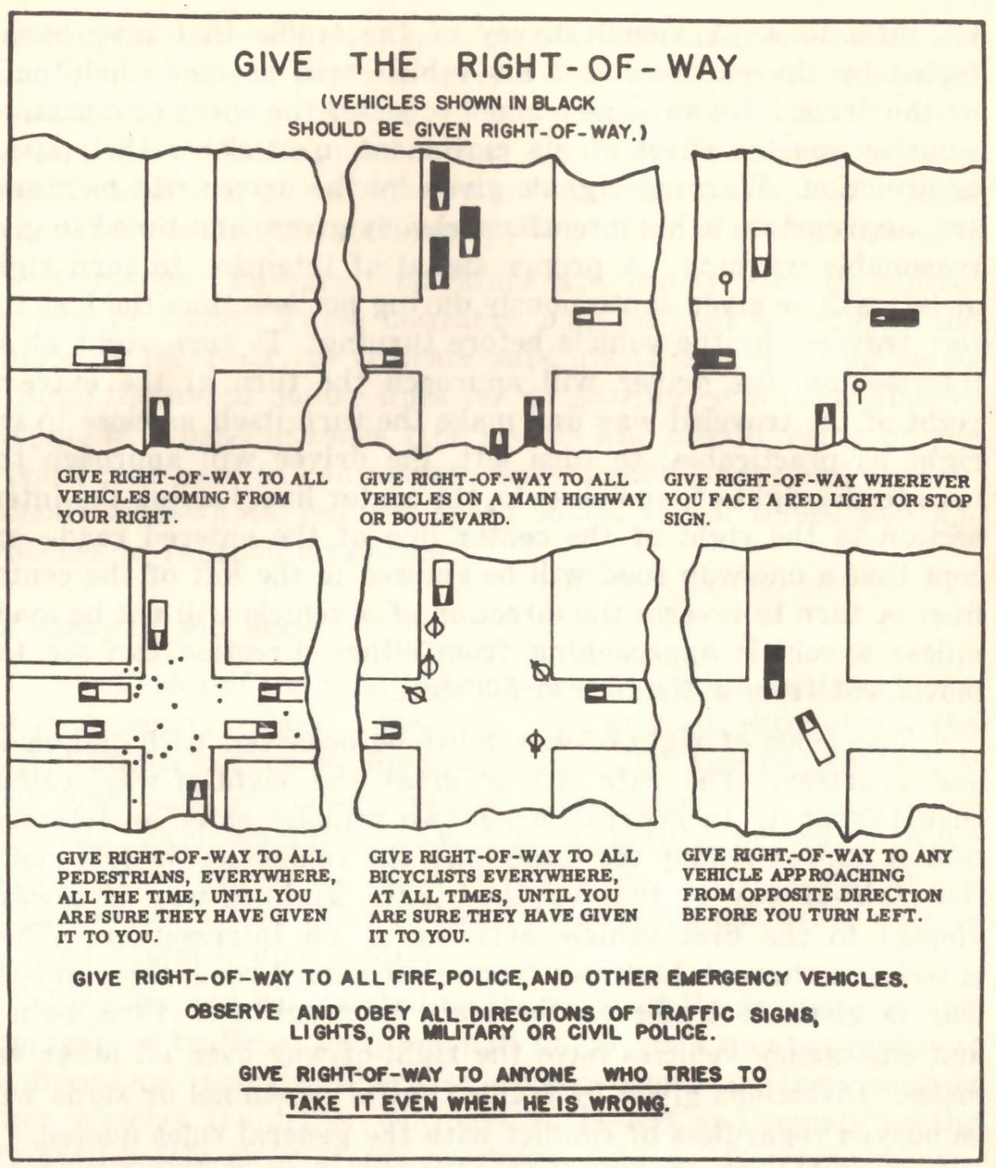

GIVE THE RIGHT-OF-WAY
(VEHICLES SHOWN IN BLACK SHOULD BE GIVEN RIGHT-OF-WAY.)
GIVE RIGHT-OF-WAY TO ALL VEHICLES COMING FROM YOUR RIGHT.
GIVE RIGHT-OF-WAY TO ALL VEHICLES ON A MAIN HIGHWAY OR BOULEVARD.
GIVE RIGHT-OF-WAY WHEREVER YOU FACE A RED LIGHT OR STOP SIGN.
GIVE RIGHT-OF-WAY TO ALL PEDESTRIANS, EVERYWHERE, ALL THE TIME, UNTIL YOU ARE SURE THEY HAVE GIVEN IT TO YOU.
GIVE RIGHT-OF-WAY TO ALL BICYCLISTS EVERYWHERE, AT ALL TIMES, UNTIL YOU ARE SURE THEY HAVE GIVEN IT TO YOU.
GIVE RIGHT-OF-WAY TO ANY VEHICLE APPROACHING FROM OPPOSITE DIRECTION BEFORE YOU TURN LEFT.
GIVE RIGHT-OF-WAY TO ALL FIRE, POLICE, AND OTHER EMERGENCY VEHICLES.
OBSERVE AND OBEY ALL DIRECTIONS OF TRAFFIC SIGNS, LIGHTS, OR MILITARY OR CIVIL POLICE.
GIVE RIGHT-OF-WAY TO ANYONE WHO TRIES TO TAKE IT EVEN WHEN HE IS WRONG.

Figure 3. When to give right-of-way.

CHAPTER 4
OPERATIONAL DRIVER TRAINING

Section I. GENERAL

41. Sequence of Training

Operational driver training is phased to take the soldier who has been prepared in the principles of military driving and maintenance and further prepare him for licensing as a competent military driver. The three following phases—basic, intermediate, and advanced—are designed to train the driver progressively. It is realized that driving experience and background will vary greatly between individuals. Instructors should be thoroughly qualified to judge deficiencies and to make the adjustments necessary for correction. For example, soldiers with an urban driving background may need further instruction on field expedients and vehicle recovery; while those with rural background may require more concentrated instruction in parking, backing, and driving in heavy traffic. The pertinent ATPs offer recommended hours of specific instruction only as a guide. Throughout this training the soldier must be continually reminded that his mission as a military driver is to move his vehicle and its cargo to its destination as safely and as expeditiously as possible—and to have it ready to roll again when ordered.

42. Selection and Improvement of Training Areas

Availability of suitable training areas will depend upon the size and location of the installation and upon the degree of centralization of training. Training centers operating under a committee system with a constant requirement for driver training will naturally construct more elaborate facilities than a separate battalion training driver to fill their immediate needs using organic equipment. In any case, those responsible must make a thorough survey of their particular situation and areas available and carefully select those most suitable for driving ranges and other facilities. Recommended layouts are included in appendix III. Modifications will depend on the site and materials available. The results achieved will depend upon the caliber of the instructors as much, or more than, upon the physical assets of the training areas.

Section II. BASIC DRIVER TRAINING

43. Introduction

This phase of instruction is designed to give the soldier sufficient operational experience to enable him to habitually follow the proper procedures and techniques in performing driver maintenance services, starting the vehicle, moving it forward and back in a straight line, and making easy turns and simple maneuvers on a level, open course. It is particularly important that driver maintenance services are performed for each period of operation. These services—before operation, during operation, and after operation—will be performed under the supervision of the instructor. Deficiencies may be set up prior to the period to serve as a check and to insure a proper understanding of the driver's duties and responsibilities. Correct driving techniques will be explained and demonstrated; and on-the-spot corrections made to prevent the formation of bad driving habits.

44. Preparation for Driving

The student driver will satisfactorily demonstrate to his instructor a basic knowledge of certain procedures, techniques, and controls prior to putting his vehicle in motion. The following outline will provide a guide for the instructor:

a. Before-Operation Services. Each driver will perform the before-operation services for his vehicle under supervision and will demonstrate his familiarity with the proper use of DD Form 110 and the TM for the vehicle.

b. Driver Compartment and Controls. A brief review of this phase of preliminary mechanical training will normally suffice since a large proportion of student drivers will have had some civilian driving experience. Only those instruments and controls peculiar to the vehicle need be covered in detail.

c. Signals and Driving Range Safety Rules. It is important that the driver know not only the normal warning and regulatory signals but also the local safety rules of the driving range.

d. Starting Procedures. While explaining and demonstrating normal starting and warm-up procedures, the instructor should point out the procedures to be used under other conditions. Use of the instruments and indicators may be further demonstrated at this time.

45. Operation of the Vehicle in Motion

Basic driver training stresses smoothness of operation and vehicle control. With vehicles equipped with manual shift transmissions, the driver may require much instruction and practice to become adept at regulating engine speeds, operating the clutch, and selecting the appropriate gear for engine load. Drivers of military vehicles with manual transmissions will normally be instructed in the techniques of double-clutching. Automatic transmissions will shorten this training time since the only function performed by the driver is the selection of the proper range. The driving course for this phase of training will be laid out on smooth, level terrain with clear straight-aways and easy curves. Flags and markers may be used to delineate courses requiring more accuracy, control, and judgment as drivers increase in proficiency. While operating the vehicle, the driver will be cautioned to be alert to any unusual sounds or operating deficiencies; thus performing his during-operation maintenance duties.

46. Halting the Vehicle, Stopping the Engine, and After-Operation Services

During his basic driver training, the military driver will be instructed in the proper techniques of braking and bringing his vehicle to a safe, smooth halt. This instruction will include halting the vehicle from both forward and reverse, the basic techniques for parking, and the proper procedures for stopping the engine. At the end of each period of practice driving, the operator will make a complete after-operation inspection and complete the DD Form 110.

47. Qualification

Qualification for the basic driving phase will be necessary before the driver is permitted to enter the succeeding phase. This qualification is based upon the satisfactory operation of the vehicle over a designated course and the satisfactory performance of all driver preventive maintenance services. Examining personnel will rate the drivers as *satisfactory* or *unsatisfactory* on the basis of a prepared checklist. Additional training or dismissal from the course of instruction will be demanded of those receiving unsatisfactory ratings.

Section III. INTERMEDIATE DRIVING

48. General

The intermediate phase of driver training introduces to the driver the techniques of driving in traffic, in convoy, and in simple off-road driving. As the driver becomes more skilled in handling his vehicle, he will be required to maneuver with greater ac-

curacy and efficiency. Intermediate driving will require the driver to apply the rules of the road, to recognize and use warning and control signals, and to judge speeds and distances.

49. Use of the Driving Ranges and Other Facilities

In situations allowing the construction of suitable driving ranges, courses for intermediate driving will normally be included. Intermediate driving courses may include permanent facilities for practice in parallel and angle parking, starting and stopping on grades, backing into confined areas, and the application of all rules of the road. This phase of training will normally include the use of established highways to instruct drivers in basic convoy techniques and to give them experience in driving in light traffic. When practicable, instruction will include some off-road driving over easily traversed terrain. Satisfactory performance of preventive maintenance duties will be required of each driver for each period of vehicle operation. Upon the satisfactory demonstration of their knowledge and practical skills in the techniques of intermediate driving, drivers will be phased into advanced driver training.

Section IV. ADVANCED DRIVING

50. General

Upon successful completion of the advanced phase of driver training, the driver will be thoroughly prepared to perform any normal military driving task. It will, however, be impressed upon him that the completion of the driver training course and issuance of the operator's permit does not mean that he has reached the ultimate in driving skill; that only conscious effort and experience can make a superior driver; and that any violation of safe driving practices may result in disciplinary action and retraining.

51. Field Expedients and Vehicle Recovery

In preparation for driving under difficult conditions, the military driver must be trained to utilize every available material to keep his vehicle moving on its assigned mission. Instruction in field expedients and vehicle recovery should include discussion and demonstration of applied mechanics. Basic principles should be stressed and training must demand ingenuity on the part of the driver in applying the principles to a variety of situations using commonly available materials. Every driver should know the use of OVM and organizational equipment in vehicle recovery and should be thoroughly instructed in the safety measures to be observed in its use. Drivers must also be impressed with the fact that driver judgment in terrain analysis and selection of proper speeds and gears may obviate the necessity for the use of field expedients (TM 5–725 and TM 21–305).

52. Cargo Loading and Lashing

The actual loading and unloading of cargo is normally not a driver responsibility. However, since the safe transportation of such cargo from origin to destination is the driver's responsibility, he should be present during the loading of his vehicle and must know the principles of proper load distribution to insure both the safety of his load and his vehicle. An improperly balanced load may easily be the cause of a serious accident. During this phase of driver training proper load distribution should be explained and demonstrated. The results of improper loading where balance affects the operation and mechanical efficiency of the vehicle may also be demonstrated. The military driver is responsible for lashing the load. He must be competent to adequately protect the cargo from shifting, from damage due to weather conditions, and from loss. This instruction may be continued throughout this phase as concurrent training to give drivers sufficient practice in the proper use of lashing ropes and knots (TM 5–725 and TM 21–305).

53. Transportation of Explosives and Flammables

Military vehicle drivers will often be called upon to transport explosives and flammable liquids, particularly in support of combat operations. It is a major responsibility of driver personnel to give sound and thorough instruction in the safety rules and regulations pertaining to the handling of this type of cargo. The transportation of explosives within the United States is controlled by regulations published by the Interstate Commerce Commission. Further regulation for military transportation is contained in AR 55–225. The handling and transportation of gasoline and other flammable liquids is prescribed by AR 850–20. Local and tactical transportation of both explosives and flammable liquids will comply with all safety regulations compatible with the situation.

54. Transportation of Personnel

The transportation of personnel both in administrative and in tactical movements is a common requirement of the military driver. The safe transportation of personnel, particularly in tactical cargo vehicles, involves problems not common to cargo transportation. The safety of passengers depends upon the state of training of the passengers as well as upon that of the driver. Since the

driver's mission is based on safe delivery at the destination within specified time limits, he should assure himself that necessary instructions have been issued and that some member of the group has been authorized to enforce compliance. Normal safety rules will be found in TM 21–305; compliance will be habitual except when a combat situation of other emergency demands some variance.

55. Advanced Convoy Driving

Advanced convoy driving should include driving in convoy over hilly terrain, passage through congested areas, movement into and out of bivouac areas, and driving under blackout conditions. Training personnel should take maximum advantage of the road net at their disposal and, when practicable, should include driving with normal loads—either cargo or personnel. This training must be closely supervised and immediate correction should be made of observed deficiencies. Supervisory personnel will have the opportunity to observe the drivers in the performance of all their operating functions during this phase of training and will require strict adherence to established procedures.

56. Off-Road Operation and Driving Under Difficult Conditions

Few drivers will have had off-road driving experience in civilian life since civilian vehicles are seldom designed or equipped for off-road operation. Preliminary instruction should include a review of the function and operation of all aids to off-road operation that are inherent in the design of military vehicles. This review should stress both the capabilities and limitations of the vehicles to insure against both overconfidence in the vehicle and lack of aggressiveness on the part of the operator. The successful off-road operator must have the ability to exploit his vehicle's capabilities without abuse. Principles of terrain analysis for trafficability should be explained and every opportunity must be taken to develop in the driver the ability to make a rapid and accurate terrain analysis and decision as to his course. The course for this phase of driver training should include a wide variety of terrain conditions and also give the drivers the opportunity to have some choice as to routes through or around natural obstacles. Training for driving under difficult conditions such as climatic and weather conditions will necessarily be limited in any single training area. Full advantage must be taken of available training films and other aids since in most situations, instruction may be limited to explanation; with demonstration and application possible only for certain procedures such as applying and adjusting tire chains.

CHAPTER 5
QUALIFICATION AND LICENSING

Section I. QUALIFICATION

57. Driver Qualification Record (DA Form 348)

The driver qualification record provides information on official qualifications, background and experience, performance record, and examination findings. This record is initiated during reception processing and is a permanent record of the individual driver, maintained by his unit on a current basis, and forwarded with his other records upon transfer. The commander will normally use driver qualification records as a basis for the selection and screening of driver candidates, the issue and reissue of driver permits, and the determination of driver training requirements to include refresher training. Administration of DA Form 348 is explained in AR 385–55 and AR 600–55; an example showing proper entries is given in TM 9–2810.

58. Driver Qualification Testing

In addition to periodic evaluation testing by driving instructors during the program of driver training, the military driver will be examined by qualified driver testing teams before issuance of a standard driver's permit. Informal testing by instructors is a training measure designed to permit early correction of deficiencies; driver qualification testing measures the end result of the program. The administration of driver qualification tests, including the prerequisites of driver testing personnel, is prescribed in AR 600–55. Tests given are comprehensive and the attainment of a qualifying grade indicates suitable driver knowledge and proficiency.

Section II. LICENSING

59. General

Every person operating a vehicle controlled by the Army must have in his possession a valid permit, Standard Form 46 (U. S. Government Motor Vehicle Operator's Identification Card). This permit will be filled out and issued in accordance with the provisions of AR 600–55 and authenticated by the commanding officer

or supervising civilian or commissioned officer. Validity of the permit will be subject to the limitations and/or restrictions indicated on it at the time of issue. Any limitations, such as those indicated for the learner permit, must be clearly understood by the operator.

60. Standard Permit

The standard, nonlimited, or full permits will be issued to all personnel to be employed as regular, part-time, or additional duty drivers upon completion of the prescribed tests and qualification in accordance with regulations. Since the driver's permit also serves as identification, all entries on the card will be carefully checked for accuracy and validity, and substantiated by the driver qualification record, before authentication and issue. Permits will be valid for a period of 3 years from date of issue unless revoked for cause. Permits will be renewed upon expiration after an examination of the driver's qualification record, administration of the physical evaluation measures, and a limited road test. Renewals may be denied on the basis of accident record and traffic violations or upon recommendation of medical officers in cases of physical limitation. Renewal procedure will be followed whenever a licensed driver is to qualify on an additional type of vehicle. A driver may retain his valid operator's permit upon transfer to a new assignment. However, commanders are authorized to re-examine and retest any or all personnel transferred to their commands and will normally review the driver qualification record to determine the advisability of reexamination. It is the responsibility of the new commander to insure that the operator is instructed in local traffic regulations and operating procedures before he is permitted to operate government vehicles at his new assignment. Cards of individuals leaving the service or terminating government employment will be surrendered and destroyed.

61. Learner Permit

Learner permits are issued to driver candidates upon beginning the course in driver training and are valid for the operation of military vehicles within the specific limitations prescribed in AR 600–55. Learner permits will be surrendered and destroyed upon completion of the course.

CHAPTER 6
SUPERVISION OF DRIVERS

62. General

Constant, well-planned, and coordinated supervision insures compliance with orders, directives, and instructions within a command. The successful performance of command functions at any level demands proper supervision by all commissioned and noncommissioned officers. Due to the nature of normal operations and maintenance, and to the urgent demands made by modern tactical concepts, the supervision of drivers of military vehicles has become a major problem. Proper supervision at all echelons will insure maximum mobility; inadequate supervision is reflected in a large deadline and heavy maintenance load.

63. Techniques of Driver Supervision

Under ideal conditions, supervisory personnel would witness all infractions of driving rules and errors or omissions in maintenance procedures; and would take immediate corrective action. Since it is physically impossible to achieve or maintain such conditions, responsible commanders will select and prescribe appropriate techniques for use by supervisory personnel within their commands. Adequate supervision is based upon a thorough knowledge of the vehicles and their proper operation, a knowledge of vehicle abuses and the ability to recognize them, and sufficient experience to predict with reasonable accuracy where and when violations are most likely to occur. Supervisory personnel will have definite lists of items to check. Checklists may be comprehensive with items listed by priority to enable the supervisor to increase or decrease the detail of his inspection in accordance with the situation. Specific types of inspections prescribed by regulation are covered in AR 750–5, AR 750–8, and AR 750–925; and further explained in TM 9–2810.

64. Driver Incentives

Driver incentives employed from the start of driver training throughout the military driver's career are of two distinct types. The first is the incentive to comply with established rules and regulations stimulated by a natural aversion to disciplinary action. This is implemented by full explanation of all pertinent rules

and regulations, and by instant and appropriate corrective action. The second type of incentive is based upon the competitive instinct. The urge to excel should be constantly fostered by supervisory personnel. During the driver training period, competition in both driving and maintenance, compatible to the phase of training, may be scheduled with public recognition for those demonstrating superior skills. In order to sustain this incentive in normal motor operation, Army vehicle drivers who have had exceptional driving performance and safety records for at least one year are eligible for safety awards under provisions of AR 385–220 and may have "Army-expert" stamped on their permits in recognition of merit; in addition, motor vehicle driver badge awards are authorized for qualified drivers in accordance with provisions of AR 600–70. It is recommended that expert driver permits and badge awards be presented at a ceremony or formation to emphasize their importance. The fair and judicious use of both types of incentive by responsible personnel will increase driver efficiency and reduce problems of maintenance to the minimum.

APPENDIX I

REFERENCES

Some of the references listed below are not mentioned in the text but all are pertinent to the subject.

FIELD MANUALS

FM 5–20	Camouflage, Basic Principles.
FM 5–20B	Camouflage of Vehicles.
FM 5–25	Explosives and Demolitions.
FM 5–35	Engineer's Reference and Logistical Data.
FM 5–36	Route Reconnaissance and Classification.
FM 7–20	Infantry Battalion.
FM 19–25	Military Police Traffic Control.
FM 21–5	Military Training.
FM 21–6	Techniques of Military Instruction.
FM 21–26	Map Reading.
FM 21–30	Military Symbols.
FM 21–60	Visual Signals.
FM 25–10	Motor Transportation, Operations.
FM 31–25	Desert Operations.
FM 31–71	Operations in the Arctic.
FM 70–10	Mountain Operations.
FM 72–20	Jungle Operations.
FM 101–5	Staff Organization and Procedure.

TECHNICAL MANUALS

TM 5–725	Rigging.
TM 9–867	Maintenance and Care of Hand Tools.
TM 9–1870–1	Care and Maintenance of Pneumatic Tires.
TM 9–2800	Military Vehicles.
TM 9–2800–1	Military Vehicles (Ordnance Corps Responsibility).
TM 9–2810	Tactical Motor Vehicle Preventive Maintenance, Supply, Inspection and Training Procedures.
TM 9–2835	Lubrication.
TM 9–2855	Instruction Guide: Operation and Maintenance of Ordnance Materiel in Extreme Cold (0° to —65° F.).
TM 9–8000	Principles of Automotive Vehicles.

TM 9–8002	Operation and Organizational Maintenance: 10-Ton, 6 x 6, Truck Tractor M123.
TM 10–1101	Petroleum Handling Operations.
TM 12–260	Army Personnel Tests and Measurement.
TM 21–305	Manual for the Wheeled Vehicle Driver.
TM 38–660–1	Operator's Maintenance Instructions and Procedures for Administrative Vehicles.
TM 38–660–2	Organizational Maintenance Instructions and Procedures for Administrative Motor Vehicles.

ARMY REGULATIONS

AR 55–355	Military Traffic Management Regulation.
AR 58–5	Motor Transportation Administrative Motor Vehicle Management.
AR 320–50	Authorized Abbreviations.
AR 385–55	Prevention of Motor Vehicle Accidents.
AR 385–220	Awards Program.
AR 600–55	Motor Vehicle Driver; Selection, Testing and Licensing.
AR 600–70	Badges.
AR 611–203	Personnel Selection and Classification—Enlisted Classification.
AR 750–1	Concept of Maintenance.
AR 750–5	Maintenance Responsibilities and Shop Operations.
AR 750–8	Command Maintenance Inspections.
AR 750–925	Spot Check Inspection and Reports.

SPECIAL REGULATIONS

SR 310–20–9	Index of Army Personnel Tests.
SR 320–5–1	Dictionary of United States Army Terms.
AR 385–40	Accident Reporting and Records.

DEPARTMENT OF THE ARMY PAMPHLETS

DA PAM 108–1	Index of Army Motion Pictures, Film Strips, Slides, and Phono-Recordings.
DA PAM 310–1	Military Publications: Index of Administrative Publications.
DA PAM 310–2	Military Publications: Index of Blank Forms.
DA PAM 310–3	Military Publications: Index of Training Publications.
DA PAM 310–4	Military Publications: Index of Technical Manuals, Technical Bulletins, Supply Bulletins, Lubrication Orders, and Modification Work Orders.
DA PAM 310–5	Military Publications: Index of Graphic Training Aids and Devices.
DA PAM 611–1	The Army Interview.

DEPARTMENT OF THE ARMY FORMS

DA Form 9–75	Daily Dispatching Record of Motor Vehicles.
DA Form 20	Enlisted Qualification Record.
DA Form 348	Driver Qualification Record.

DEPARTMENT OF DEFENSE FORMS

DD Form 110	Vehicle and Equipment Operational Record.
DD Form 518	Accident Identification Card.

STANDARD FORMS

SF 46	United States Government Motor Vehicle Operator's Identification Card.
SF 91	Operator's Report of Motor Vehicle Accident.

DEPARTMENT OF THE ARMY, PERSONNEL RESEARCH TEST

DA PRT 2609	Driving Know-How Test.
DA PRT 2610	Visual Judgment Test.
DA PRT 2612	Army Self-Description Blank (Transport).
DA PRT 2613	Attention to Detail Test.
DA PRT 2617	Two-Hand Coordination Test.
DA PRT 2623	Emergency Judgment Test.
DA PRT 2676	Manual for Motor Vehicle—Driver Selection—Batteries I and II.
DA PRT 2677	Testing Procedures for Licensing Drivers of Army Motor Vehicles.

Uniform Traffic Control Devices. Washington: U. S. Government Printing Office.

APPENDIX II

EVALUATION CHART FOR SELECTION OF INSTRUCTORS

Suggested requirements	Degree of qualification	Rating *
DRIVER'S PERMIT (Standard Form 46)		
Including types of vehicles to be used in training.	Has permit YES_____ NO_____ Expert YES_____ NO_____	
EDUCATION AND EXPERIENCE		
Graduation from a senior high school.	Years high school: 0 1 2 3 4 Years college: 0 1 2 3 4	
Four years full-time paid experience in motor vehicle operation, maintenance, or both; or two years supervisory experience or teaching in the fields of operation, maintenance, or both.	Enter years of experience in appropriate spaces: Operation: General_____ Supervisory_____ Teaching_____ Maintenance: General_____ Supervisory_____ Teaching_____	
TECHNICAL KNOWLEDGE		
A passing score of 80 on an objective written examination.	Score_____	
APTITUDE		
A better than average score in appropriate aptitude areas based on Army Classification Battery.	Classification profile:	
PERSONALITY	Circle appropriate degree:	
Soldierly appearance and bearing	0 1 2 3 4	
Clear and coherent speech	0 1 2 3 4	
Dependability	0 1 2 3 4	
Leadership qualities	0 1 2 3 4	
Enthusiasm	0 1 2 3 4	
Emotional stability	0 1 2 3 4	
Ability to work with others	0 1 2 3 4	
Ability to present technical information clearly and simply	0 1 2 3 4	
Ambition and imagination—the drive and ability to improve continually in an assigned task.	0 1 2 3 4	

* Rating is accomplished numerically on a comparative basis—0 indicates unsuitability, 4 indicates superiority, while 2 is average. In item 1, YES is rated as 4, NO as 0. All degrees of qualification shown in item 5 are averaged for a personality rating.

AGO 3245B

APPENDIX III

DRIVING RANGES—SUGGESTED DESIGNS AND CONSTRUCTION DETAILS

1. Permanent Driving Range

A permanent driving range may be constructed for use in stabilized training situations where large numbers of students are involved. The construction of a range such as that shown in figure 4 will provide instruction and practice facilities for a large number of students in all phases of driver training, and will accommodate a variety of vehicles up to 2½-ton cargo trucks. The time and expense of construction will be offset by increased efficiency in training. Modification of this design may be necessary to conform to the terrain available, or to provide for training with larger vehicles.

2. Temporary Driving Ranges and Courses

The time and expense of construction for temporary driving ranges is kept to the minimum. However there must be no neglect of planning. To provide for efficient training with limited facilities, additional care and ingenuity must be exercised in planning and scheduling. Recommended designs for the construction of barricades and standards used in the temporary marking of driving courses are shown in figure 5. Layouts of suggested courses for instruction and practice in essential driving maneuvers are shown in figures 6 through 17.

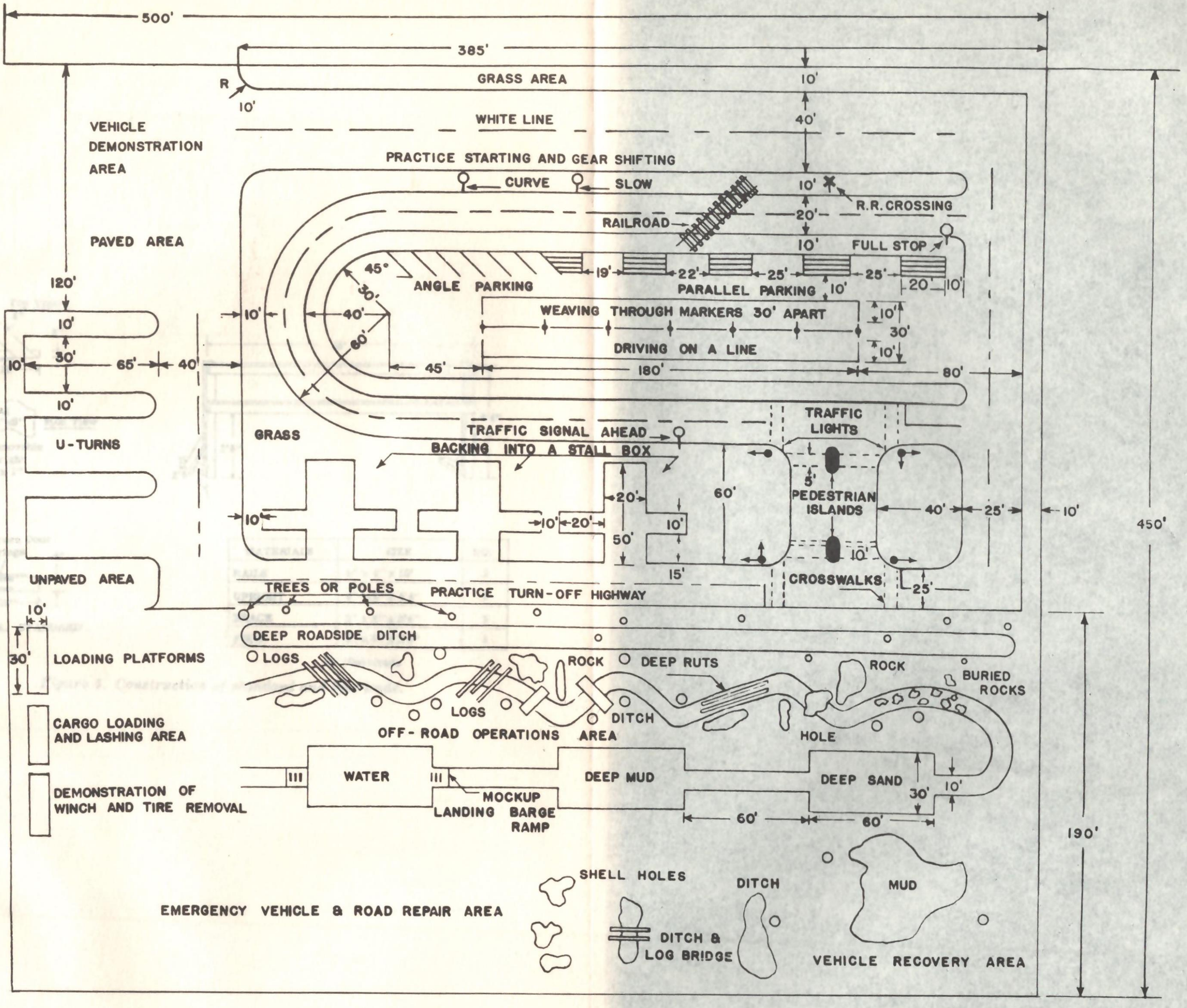
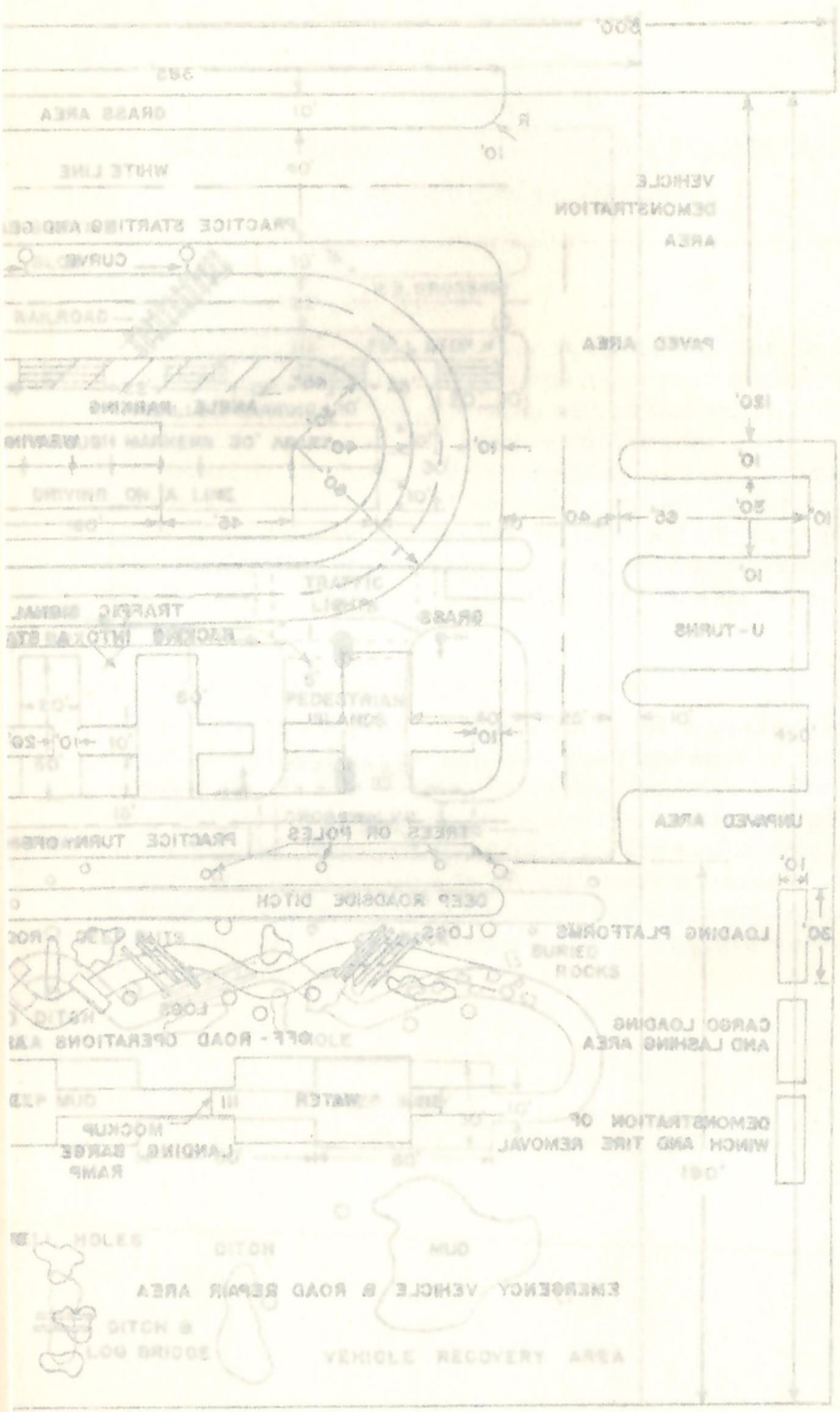
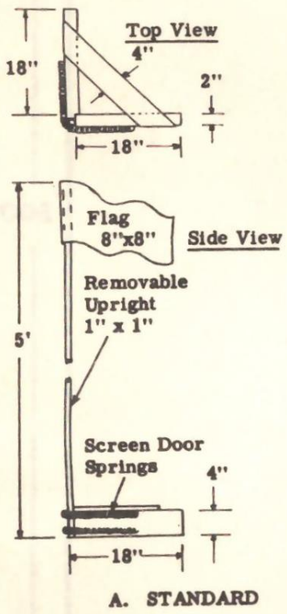
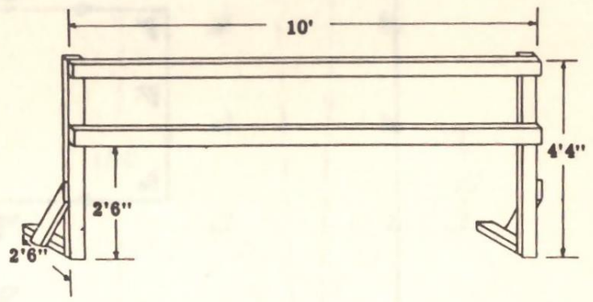


Figure 4. Permanent driving range.





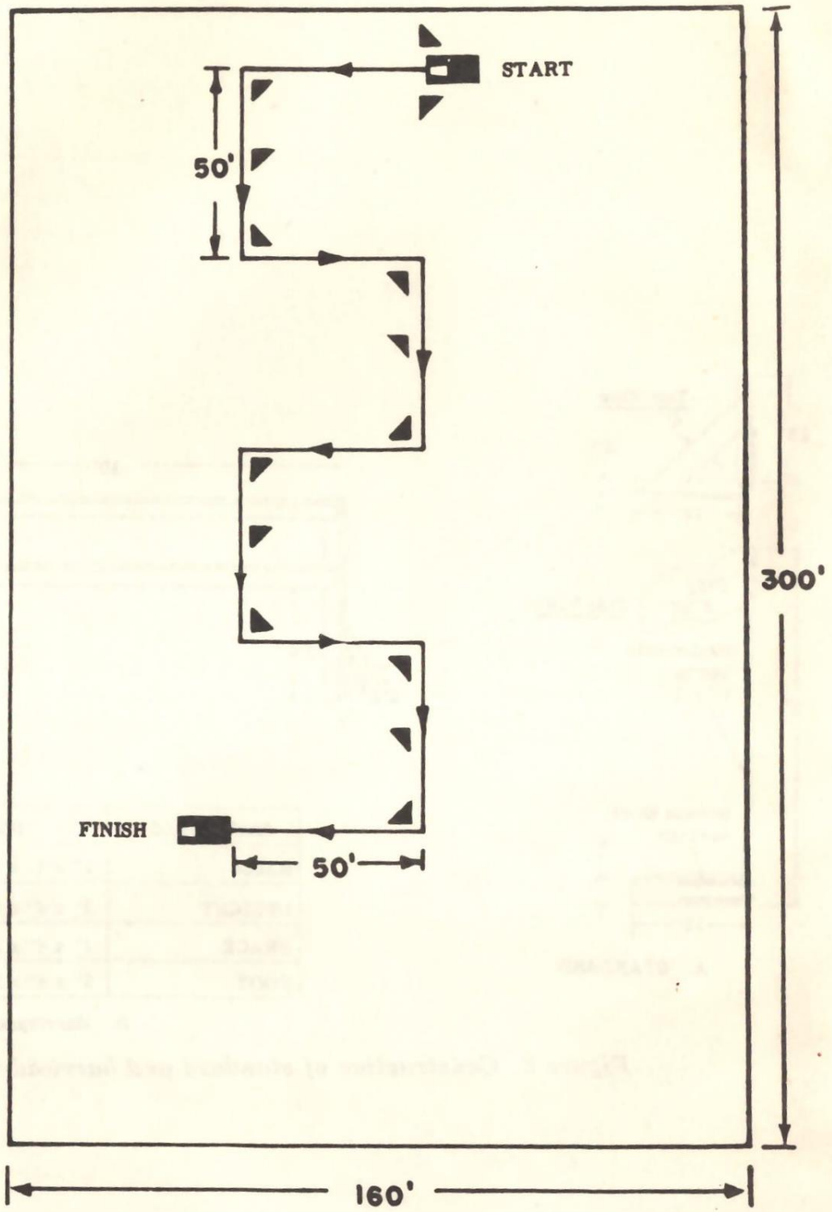
A. STANDARD



MATERIALS	SIZE	NO.
RAILS	1" x 4" x 10'	2
UPRIGHT	2" x 4" x 4'4"	2
BRACE	1" x 4" x 2'6"	2
FOOT	2" x 4" x 2'6"	2

B. Barricade

Figure 5. Construction of standard and barricade.

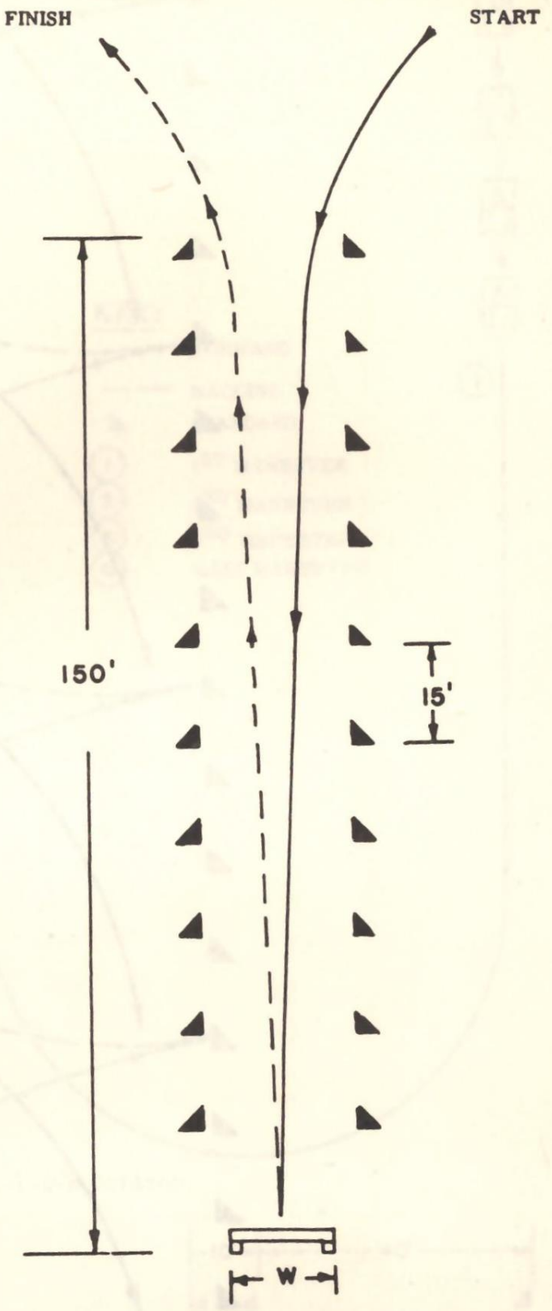


KEY:

STANDARD

FORWARD

Figure 6. Temporary driving range, showing right and left turns.



KEY:

STANDARD

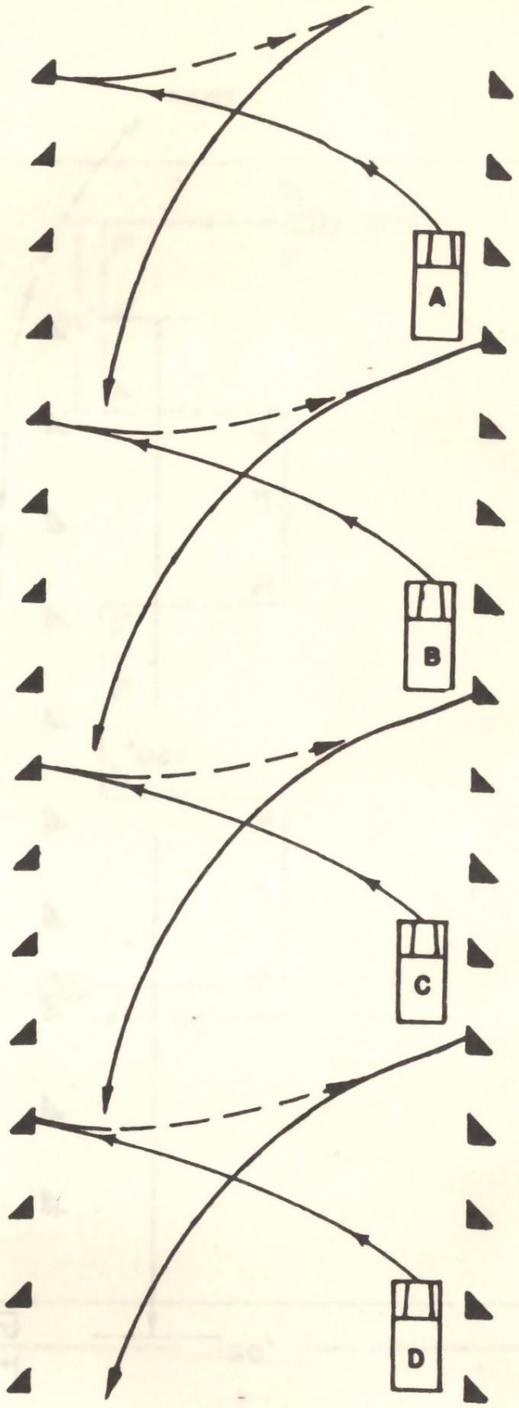
FORWARD

BACKING

BARRICADE

W MINIMUM COURSE WIDTH -- WIDTH OF TRAINING VEHICLE

Figure 7. Driving between standards.



KEY:

STANDARD

FORWARD

BACKING

Figure 8. Turning around.

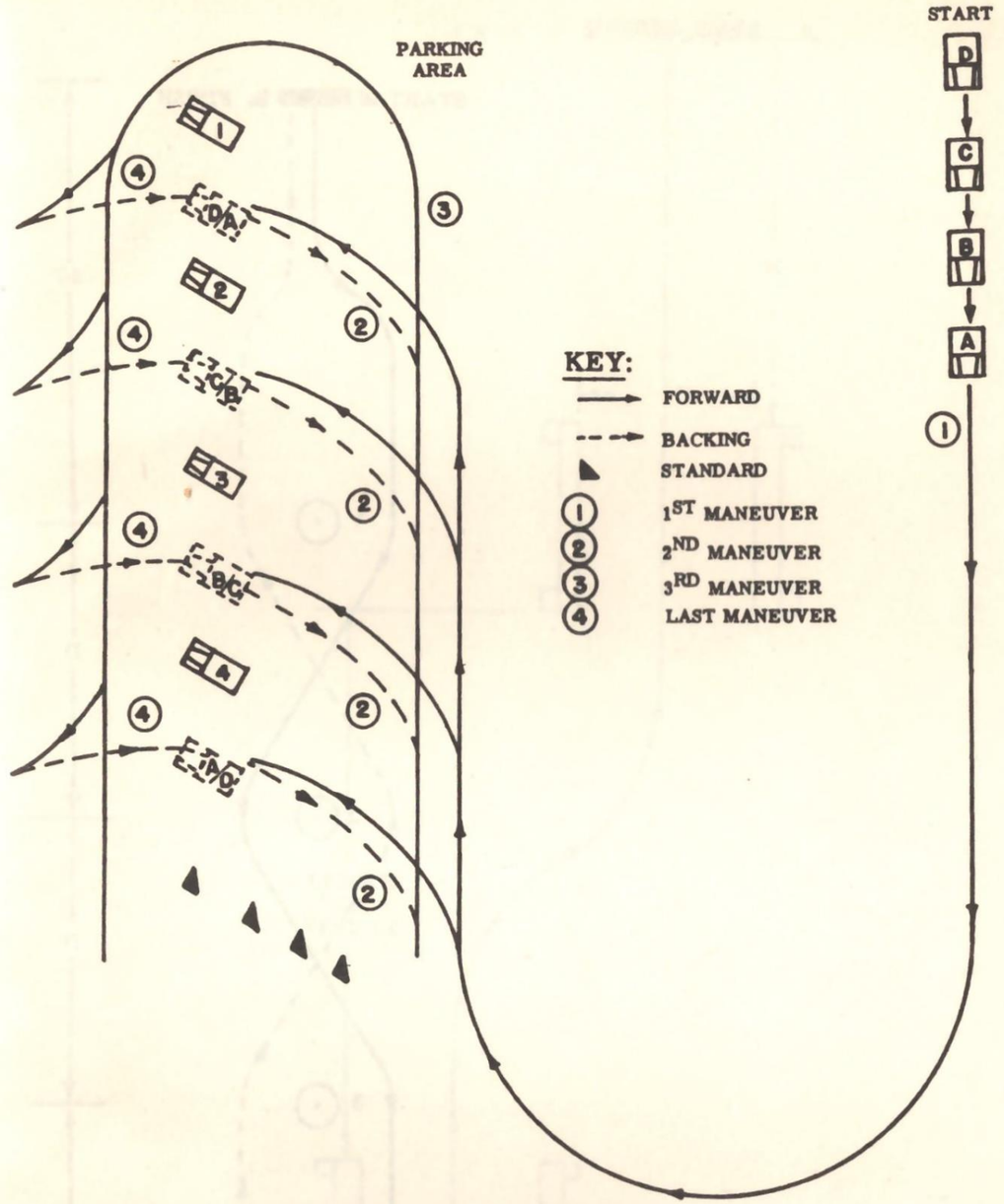
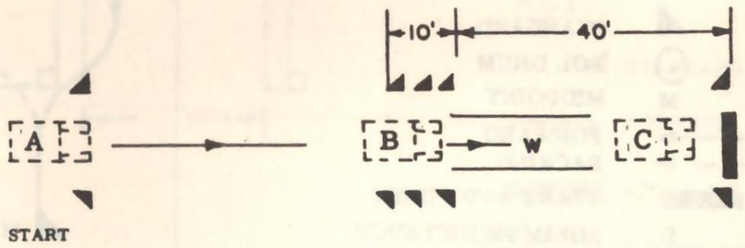


Figure 9. Angle parking.



KEY:

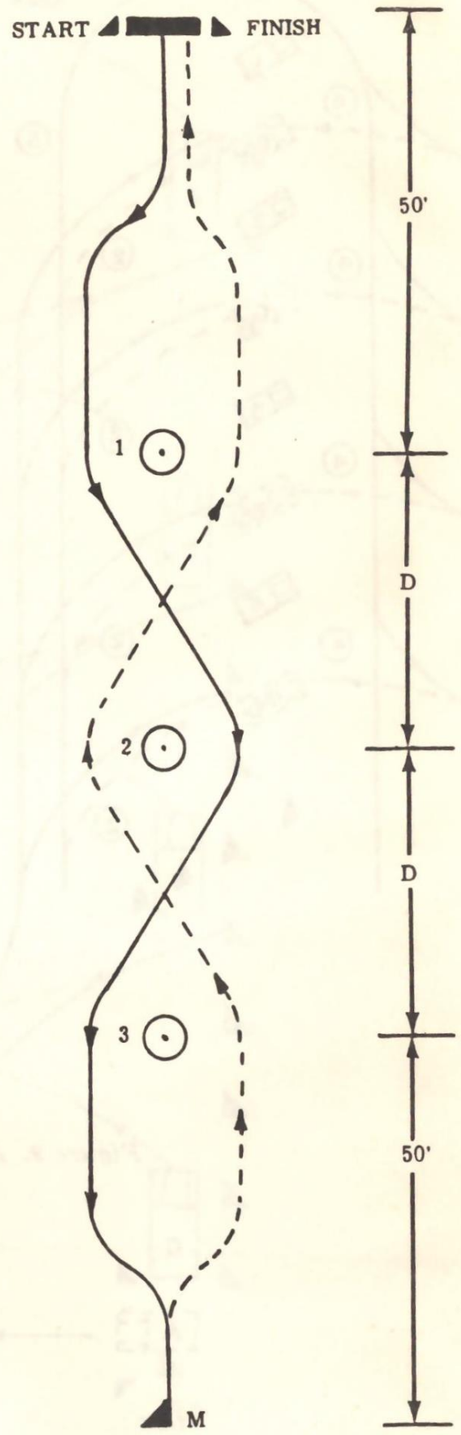
STOP LINE

FORWARD

STANDARD

W WIDTH OF VEHICLE PLUS 4 FEET

Figure 10. Stopping within prescribed limits.



KEY:

◢	STANDARD
⊙	POL DRUM
M	MIDPOINT
→	FORWARD
- - →	BACKING
▬	START AND FINISH
D	MINIMUM DISTANCE BETWEEN DRUMS:

SEMITRAILER, SINGLE AXLE - 34 FEET
SEMITRAILER, TANDEM AXLE - 36 FEET
TRUCK, WITH OR WITHOUT TWO-WHEEL TRAILER - 34 FEET

Figure 11. Driving a serpentine course.

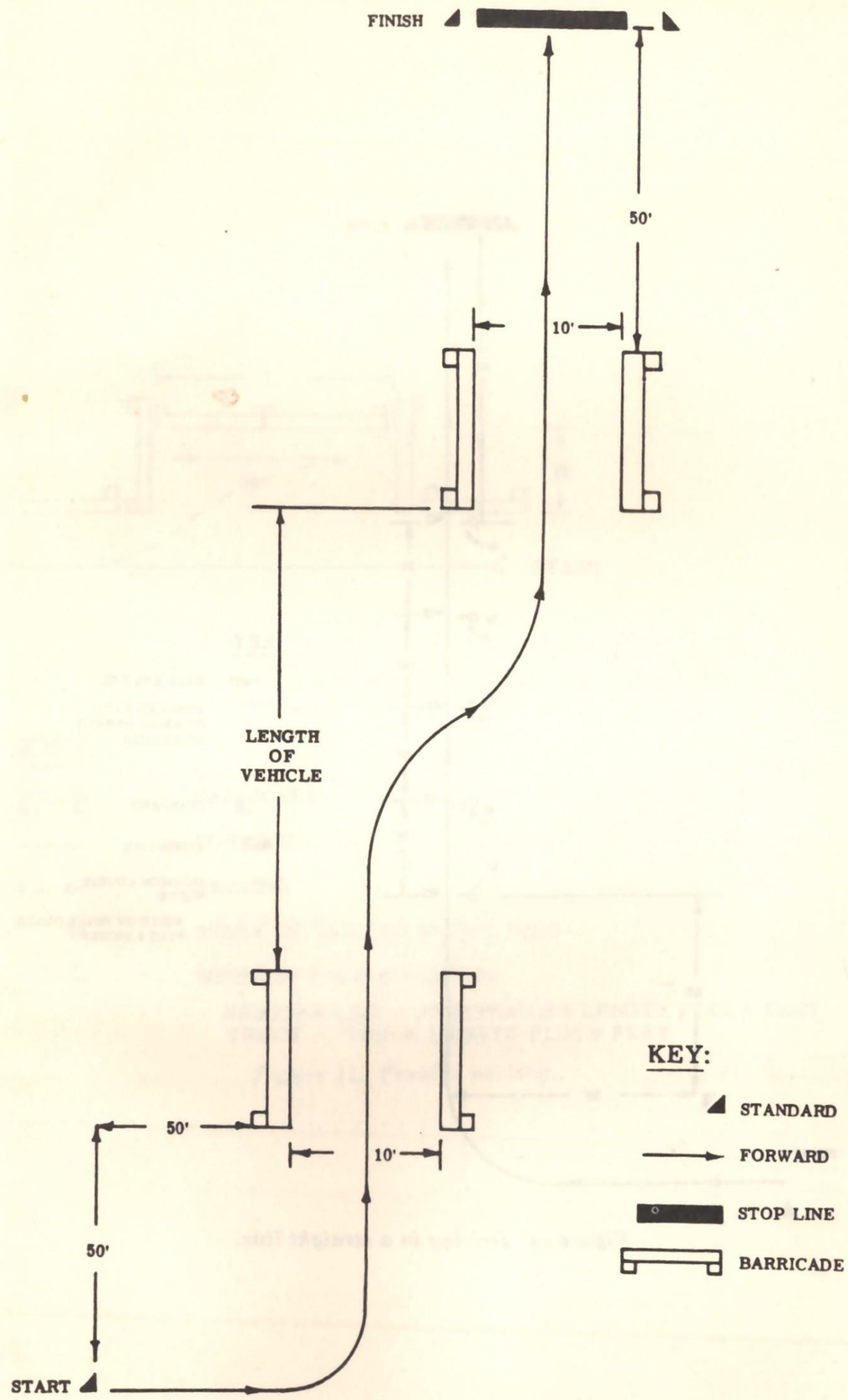


Figure 12. Driving in an offset alley.

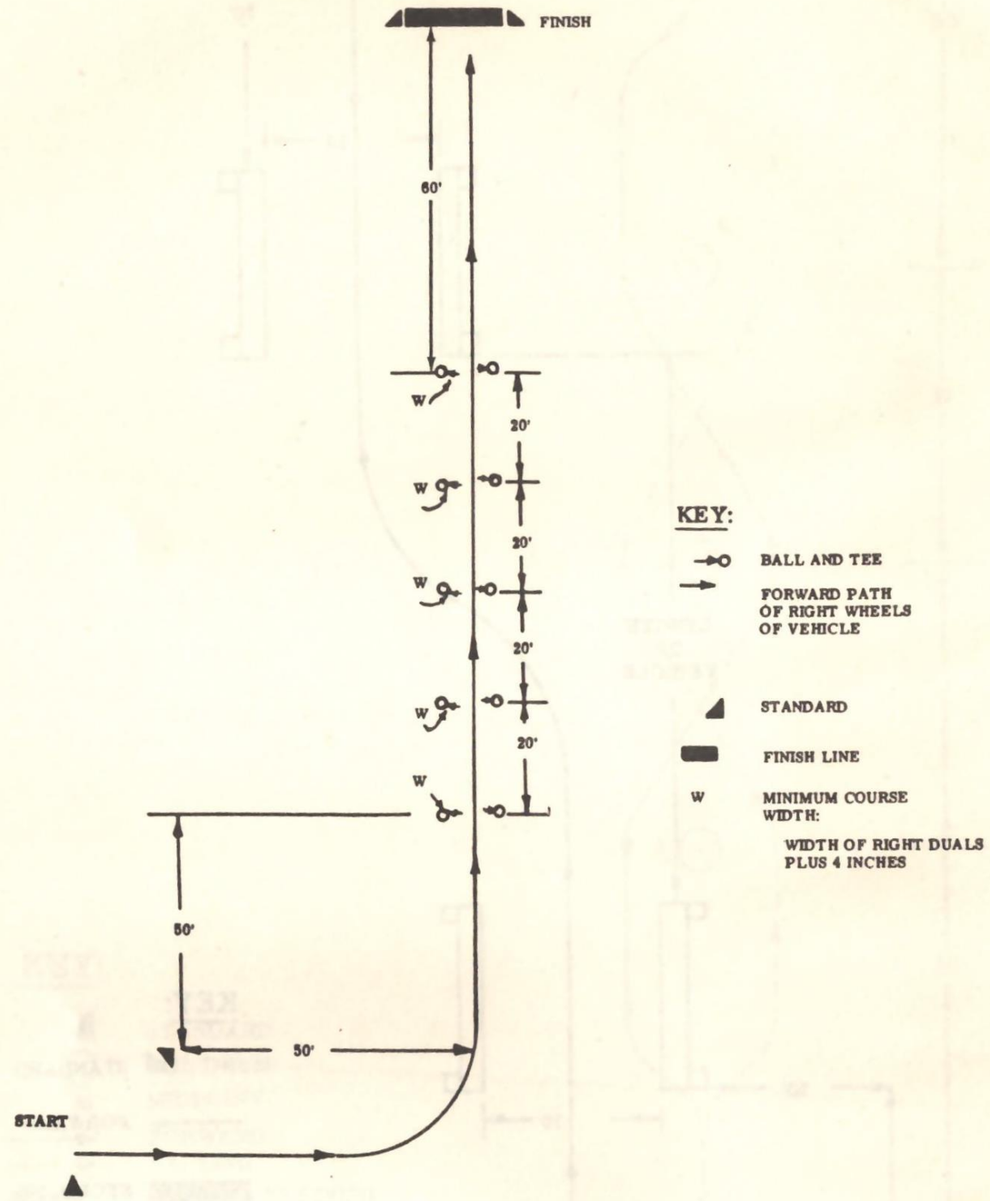
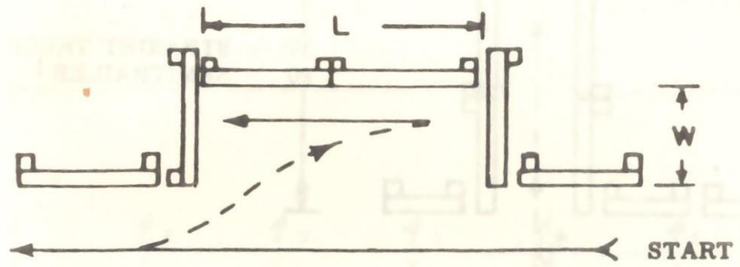


Figure 13. Driving in a straight line.



KEY:

BARRICADE

FORWARD

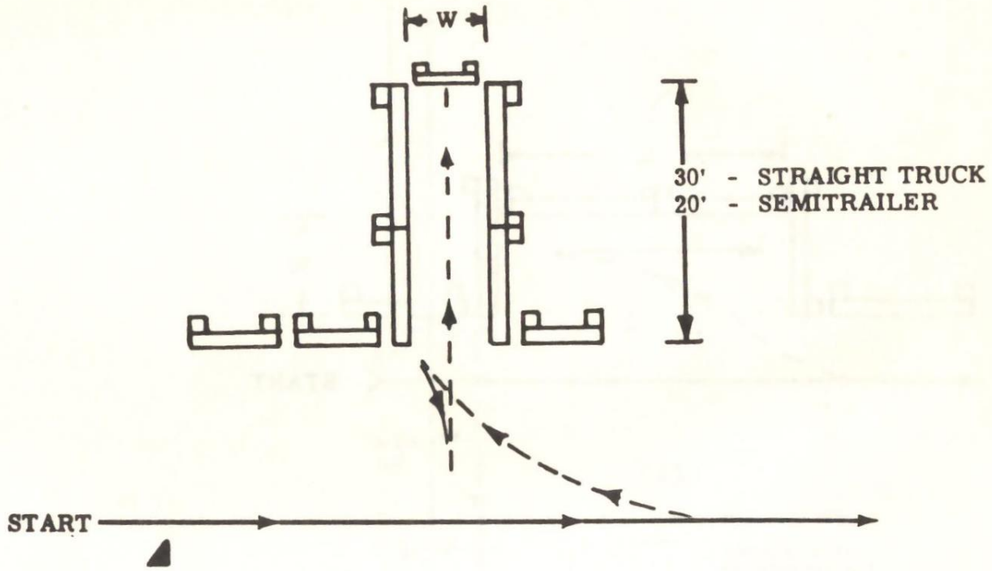
BACKING

W — **WIDTH OF VEHICLE PLUS 1 FOOT**

L — **MINIMUM COURSE LENGTH:**

SEMITRAILER - SEMITRAILER LENGTH PLUS 4 FEET
TRUCK - TRUCK LENGTH PLUS 6 FEET

Figure 14. Parallel parking.



KEY:

STANDARD

BARRICADE

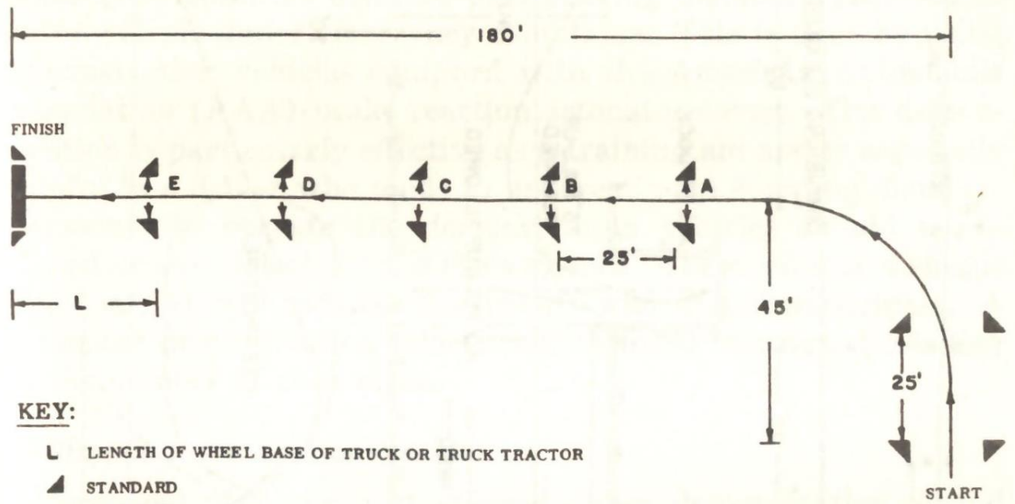
FORWARD

BACKING

W MINIMUM COURSE WIDTH:

SEMITRAILER, TANDEM AXLE AND TRUCK WITH TWO-WHEEL TRAILER - 12 FEET
SEMITRAILER, SINGLE AXLE AND STRAIGHT TRUCK - 10 FEET

Figure 15. Backing to an alley dock.



KEY:

L LENGTH OF WHEEL BASE OF TRUCK OR TRUCK TRACTOR

STANDARD

FORWARD

STOP LINE

A-E MINIMUM COURSE WIDTH:

A WIDTH OF VEHICLE PLUS 12 INCHES
B WIDTH OF VEHICLE PLUS 10 INCHES
C WIDTH OF VEHICLE PLUS 8 INCHES
D WIDTH OF VEHICLE PLUS 6 INCHES
E WIDTH OF VEHICLE PLUS 4 INCHES

Figure 16. Driving with diminishing clearance.

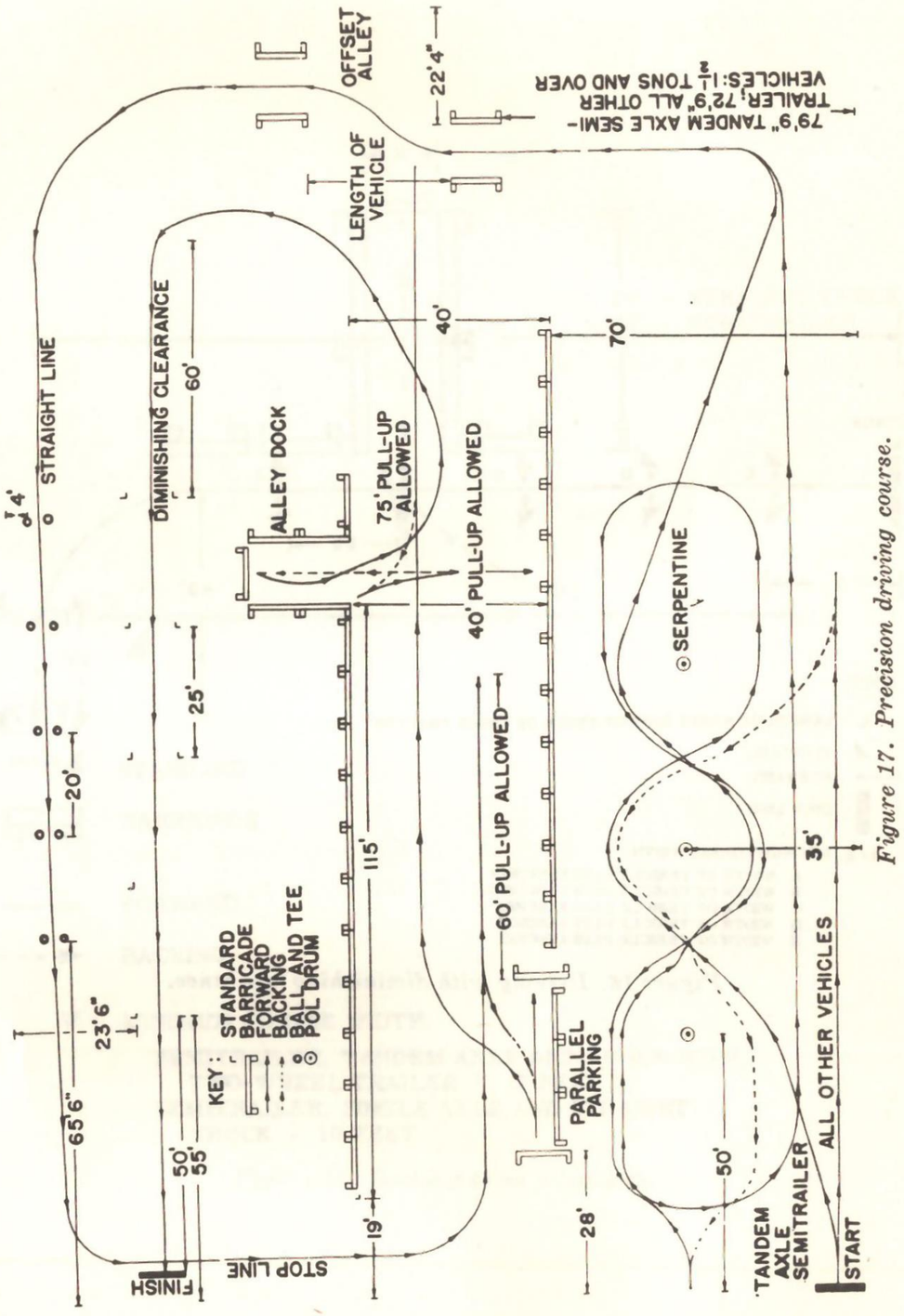


Figure 17. Precision driving course.

APPENDIX IV

STANDING OPERATING PROCEDURE FOR GIVING A DETONATOR DEMONSTRATION

1. Introduction

The purpose of this demonstration is to show the stopping distance (reaction-time distance plus braking distance) required to halt a vehicle under emergency conditions. This is done by using demonstration vehicles equipped with the American Automobile Association (AAA) brake reaction detonator device. This demonstration is particularly effective as a training aid and is especially helpful to a driver who tends to underestimate stopping distance. Personnel to operate the demonstration vehicles should be licensed drivers selected from the audience. The results of a simple test (par. 5) will indicate the drivers who should participate. A detonator demonstration takes from 15 to 30 minutes, depending on the number of runs made.

2. Planning the Demonstration

Personnel planning a stopping-distance demonstration should proceed as follows:

a. Select demonstration area. A level straight-of-way, at least ¼-mile long, preferably concrete, should be selected as near the motor pool or conference room as practicable. Usually members of a committee, including representatives from post provost marshal, post engineer, safety director, and motor pool, survey the area and jointly agree on the site. The road surface must be smooth, without chuck holes, and free of loose gravel. Shoulders should be wide enough and firm enough to accommodate a vehicle. Cross streets should be barricaded or guarded by military police. A fire hydrant should be available for flooding the pavement for "wet road" demonstration; however, a pumper fire truck with reserve water tanks may be employed for this purpose. The demonstration area must be under the protection of military police, who will block other traffic from the road and also will keep all onlookers clear of the pavement during tests. Vehicles must be parked clear of the roadway and off the shoulders in the test area. It is desirable to have an ambulance stand by.

b. Schedule demonstration at a time that is convenient for the observers; select the date with regard to weather forecasts. Should inclement weather prevent the scheduled demonstration, an alternate program or date should be established in advance.

c. Invite the commanding officer, members of his staff, and civil or commercial representatives who should be interested in accident prevention.

d. Announce details of the demonstration in the daily bulletin.

e. Provide for news coverage and photographs.

f. Request the presence of a military police detail and brief personnel on their duties.

g. Request the presence of a fire department detail and brief personnel on the equipment and service required.

h. Select and brief assisting personnel.

i. Select parking area for observer's vehicles.

j. Arrange for transportation to demonstration area if necessary.

k. Provide barricades for cross streets.

l. Provide facilities for audience. When available, bleacher seats should be erected for the comfort and safety of the audience. When bleachers are not available, the audience should stand in a roped off area along the side of the demonstration roadway. A public address system should be erected with the loudspeakers directed toward the audience.

m. Prepare supply of quiz forms.

n. Select participating drivers. After the organization's drivers have been assembled, give the quiz for estimating stopping distances (par. 5). The drivers should be told to fill out the forms alone without consulting their neighbors. After the quiz forms have been completed and collected, the names and estimates of the four or five most optimistic drivers (drivers with the shortest estimated stopping distances) are announced, and, if otherwise qualified, these drivers are requested to present themselves to drive test vehicles of their choice.

o. Arrange for use of test vehicles. At least three different types of vehicles should be used, preferably those most commonly operated and those most frequently involved in accidents. Usually, the three types employed are the sedan, jeep, and 2½-ton, 6 by 6 cargo truck. These may be supplemented, depending on the operation, by weapon carriers, semitrailers, etc. To achieve the best possible performance, the following items should be carefully checked and adjusted before the test: brakes, steering mechanism, windshield wiper, speedometer, and horn.

p. Police demonstration area.

q. Conduct "dry run" with equipment and personnel well in advance of the actual demonstration, carefully observing and correcting any faulty performance.

r. Obtain the following materials:

(1) Detonator apparatus and ammunition. The brake reaction detonator device may be electrical or mechanical in operation. Although the electrical type is somewhat more reliable, the mechanical type is more easily transferred from one vehicle to another. The double-barreled models are preferred. Ammunition consists of .22-caliber blank cartridges. The marking load used with the ammunition will depend upon the design of the detonator apparatus selected.

(*a*) When the muzzles of the apparatus are drilled to the approximate size of ordinary stick chalk, .22-caliber short blank cartridges may be used as a propellent charge for stick chalk loaded in the muzzles.

(*b*) When the muzzle openings of the apparatus are approximately the same as the breech openings, .22-caliber short blank cartridges may be used as a propellent charge for chalk-filled No. 3 gelatine capsules loaded in the muzzles. The gelatine capsules may be obtained from medical supply.

(*c*) Convenient all-in-one loads are manufactured: The marking load in these is contained in a .22-caliber long-rifle blank cartridge. Before such a cartridge is used, it may be necessary to ream the breech of the detonator to readily accommodate the long-rifle case, thus preventing sticking.

(2) Ramrod.

(3) Pocket knife.

(4) Sharpened pencils—one for each observer.

(5) Fifty-foot steel tape.

(6) Six sticks of chalk.

(7) Helmet liner for test rider.

(8) Clip board with "estimated and performances" form.

(9) Blackboard, chalk, and erasers.

3. Safety Precautions

Before beginning the demonstration, the officer in charge of the demonstration must be certain that the following safety precautions are observed:

a. All drivers are briefed on the technique of recovering from skids. Before any driver is allowed to drive any vehicle, he must clearly indicate his realization that not only does one *steer* in the direction of the skid, but the brakes must be *released* to permit steering.

b. All vehicle entrances to the test area are either barricaded or have military police guards.

c. All observers are within the prepared audience areas. Military police are stationed along the demonstration roadway to prevent persons from crossing during the demonstration.

d. Personnel responsible for loading the detonator apparatus are briefed in the measures to be taken in the event of detonator misfire. These measures are the same as those used for any live ammunition.

4. Procedure

a. Assisting Personnel.

(1) At least five persons are needed to present a stopping-distance demonstration properly. The instructor may select assisting personnel from the audience; however, a successful demonstration usually requires persons who have been carefully oriented in their responsibilities.

(2) The instructor is in charge of the demonstration. His duties include explaining the test procedures and apparatus and making announcements over the public address system. Before the test runs are started, he familiarizes the audience with the nature of the test, the apparatus used, the operation of the detonator, etc. He should possess showmanship, public speaking ability, and a comprehensive understanding of the brake reaction test. He recapitulates performances, answers questions, and "keeps the show running". Prearranged hand signals are used by him to start the vehicle from the ready line and to indicate the desired speed.

(3) Assistant No. 1 "mans" the blackboard, listing names and performances of test drivers. He records all measurements on the blackboard, adds them, and calls the sum—for example, "Forty-two feet total stopping distance." A sample entry on the blackboard would be as follows:

Driver's name	*Estimates*	*Test speed*	*Vehicle*
John Doe	20 mph 30 mph 40 mph	30 mph	Sedan
	8 ft 20 ft 30 ft		

Performance

Reaction time distance + braking distance = stopping distance

20 ft + 22 ft = 42 ft

(4) Assistants No. 2 and 3 serve as tape men. With a 50-foot steel tape, they quickly measure and call off the reaction-time distance, thinking, and braking distance of each test run. All measurements are made from the first marks so that the first call indicates reaction-time distance and the second call, braking distance; for example, "Reaction, 20 feet; braking, 22 feet." After measuring a given mark, tape men cancel it to prevent its being confused with later marks.

(5) Assistant No. 4 must be especially capable and responsible. His duties include inspecting and riding in the demonstration vehicle, interrogating the driver about correct procedure for stopping, giving specific instructions to the driver, and establishing and calling speeds. His primary responsibility is to conduct each run in a safe manner. Much of the success of the demonstration depends on him. He is also responsible for initial parking of the demonstration vehicles. He carries a supply of ammunition and marking loads and is responsible for installing, loading, and firing the detonator device on each vehicle. To forestall delays, he also carries a knife with a strong blade, a suitable ramrod, and long-nosed pliers to cope with shell cases that are stuck or with breakdowns. The rider must wear a crash helmet or helmet liner.

b. Explanation of the Demonstration to the Observers. Before demonstrations begin, one vehicle (usually a sedan) with a detonator device attached is parked facing the observers. The rest of the vehicles are parked at the starting point, headed toward the test area, in order of their intended use. The detonator is clamped or strapped midway on the front bumper. This position prevents the skidding tires from erasing the marks made by the detonator. The lanyard (if used) is run to the window on the passenger side of the front seat of the vehicle, and the device is loaded with marking loads and blank ammunition. The instructor briefly demonstrates the apparatus and explains to the group the general manner in which the demonstration will be carried out. If the stopping distance demonstration includes showing the variance of the stopping ability between conventional tire tread and snow and mud tread, two similar vehicles should be used, each fitted with different tires.

c. Starting Point. The starting point should be on a straight, level road at least ¼ mile from the demonstration area.

d. Speed. The speed should be 20 to 30 miles per hour; it should

never exceed 40 miles per hour. Whenever the driver exceeds 40 miles per hour, the run should be abruptly terminated, even if it means turning off the ignition. In such a case, both the audience and the driver should be informed that expert drivers never take chances unnecessarily, and that the rider is not interested in needlessly risking his life with a careless or reckless driver. A more reliable driver will be selected from the group (regardless of his estimate) and the demonstration continued. At all times, it must be remembered that this demonstration is given in the interest of accident prevention, and any deviation from, or compromises with, safety will defeat the purpose of the demonstration.

e. Loading the Apparatus. The rider orders the vehicle to be driven slowly to the starting point. En route, the driver is encouraged to test vehicle brakes at slow speed to become familiar with this operation and to give the rider an opportunity to observe braking procedure. On reaching the starting point, the vehicle is halted; the rider dismounts, guiding the driver while the vehicle is turned around. After making certain that the gears are disengaged and the parking brake set, the rider loads and cocks the device (chalk capsule first, then blank cartridges), making certain that the lanyard is not fouled. If chalk-filled gelatine capsules are used, they may be moistened slightly or crushed before insertion to insure that they will not fall out during the run.

f. Final Instructions to the Driver.

(1) On remounting the vehicle, the rider carefully questions the driver about the procedure to be followed for steering and braking in event of a side skid. The run must not be started until the driver clearly indicates that he is thoroughly familiar with the proper procedure. This is extremely important because the whole purpose of the demonstration would be defeated by a vehicle out of control.

(2) The rider then advises the driver that the vehicle will be driven at a given speed (for example, 30 miles per hour) through the demonstration area, in normal road gear, the right foot on the accelerator and both hands on the wheel. The driver is instructed to make an emergency stop upon hearing a shot fired. The driver is assured that, for the purposes of the demonstration, he should feel free to "burn rubber." The horn is sounded three times to warn observers to clear the road, and the vehicle moves out.

g. The Demonstration Run.

(1) While the vehicle approaches the demonstration area, the rider securely braces himself with left hand against cowl (not on windshield), feet planted firmly on the floor, and right hand in position to grasp the window frame after the shot is fired. Unless these precautions are taken, the rider may be thrown against the windshield.

(2) When the vehicle is in such a position as to be in full view of the observers, the rider fires the apparatus. For spectator safety, the best place for firing the first shot is at least halfway past the group of observers. An uncontrolled skid would not then jeopardize onlookers. If the mechanical detonator is used, the lanyard is pulled slowly until the detonator is fired; a sudden jerk on the string will usually spoil the run by causing both rounds to fire. The rider braces himself and carefully watches the steering and braking procedures. As a last resort (should the need arise), the rider must be ready to kick the driver's right foot from the brake in the case of an uncontrolled side skid.

h. Marking and Measuring. The first round is fired by the rider; the second is automatically fired by brake application. Each shot marks the pavement, indicating distances traveled while reacting and braking. After the vehicle comes to a stop, the tape men place a chalk mark on the pavement beneath the detonator to indicate the final stopping point. The vehicle is then moved ahead to clear the mark for measuring.

Note. To illustrate effectively to the driver the hazard zone which constantly extends ahead of a vehicle at the given speed, it is sometimes necessary to back the vehicle until the detonator is exactly above the mark where the first shot was fired.

i. Wet Pavement Demonstration Run. After the dry pavement runs have been completed, stopping on a wet pavement may be demonstrated by flooding a 200-foot portion of the road with a fire hose. The wet road should be traversed by the same vehicle and driver at a speed identical with a previous dry pavement run, and a detonator stop made. The speed on wet pavement should never exceed 30 miles per hour, and, in most cases, 20 miles per hour is adequate. The danger of improperly adjusted brakes is evident when making emergency stops on wet pavement. The driver's reaction distance is usually constant, but the braking distance is greatly increased, the amount of increase depending on the type of roadway. A particularly effective demonstration can be made if the fire hose, after wetting the pavement, is used to wet the tires of the approaching vehicle. This should not be

done unless the windshield wiper is already operating on the approaching vehicle.

5. Estimated Stopping Distance Quiz

HOW WELL DO YOU DRIVE?

With good brakes and favorable road conditions, I estimate that my BEST STOP (reaction time plus braking distance) made with ____ TRUCK ____ SEDAN ____ JEEP ____ MY OWN CAR (encircle one) would be

about _____ feet at 20 miles per hour.
about _____ feet at 30 miles per hour.
about _____ feet at 40 miles per hour.
about _____ feet at 50 miles per hour.
(fill in each blank)

I possess *Motor Vehicle Operator's Identification Card* (*Yes-No*) *State Driver's License* (*Yes-No*) to drive the vehicle(s) circled above. (Encircle *Yes* or *No* as applicable).

(Print) NAME _____ UNIT _____

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[AG 353 (11 Mar 58)]

By Order of *Wilber M. Brucker*, Secretary of the Army:

MAXWELL D. TAYLOR,
General, United States Army,
Chief of Staff.

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R. V. LEE,
Major General, United States Army,
The Adjutant General.

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CNGB (2)
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CofF (1)
CMH (1)
TPMG (2)
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Technical Stf Bd (1)
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US ARADCOM (5)
US ARADCOM Rgn (5)
OS Maj Comd (10)
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MDW (2)
Armies (5)
Corps (5)
Div (2)
Brig (2)
Regt/Gp/Bg (2)
Bn (2)
Co/Btry (2)
USATC (5)
Trans Tng Comd (10)
USMA (2)
Svc Colleges (2)
Br Svc Sch (20) except
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USAAMS (2,800)
USAES (300)
USAIS (360)
USA Ord Sch (350)
PMGS (450)
USASCS (250)
USATSCH (500)
PMST Sr Div Units (1)
PMST Jr Div Units (1)
PMST Mil Sch Div Units (1)
Gen Depots (2)
Army Terminals (5)
Mil Dist (2)
USA Corps (Res) (4)
Sector Comd, USA Corps (Res) (4)
MAAG (2)
Mil Mis (1)

NG: State AG (3); units—same as Active Army except allowance is one copy to each unit.

USAR: Same as Active Army except allowance is one copy to each unit.

For explanation of abbreviations used, see AR 320–50.

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